

CB

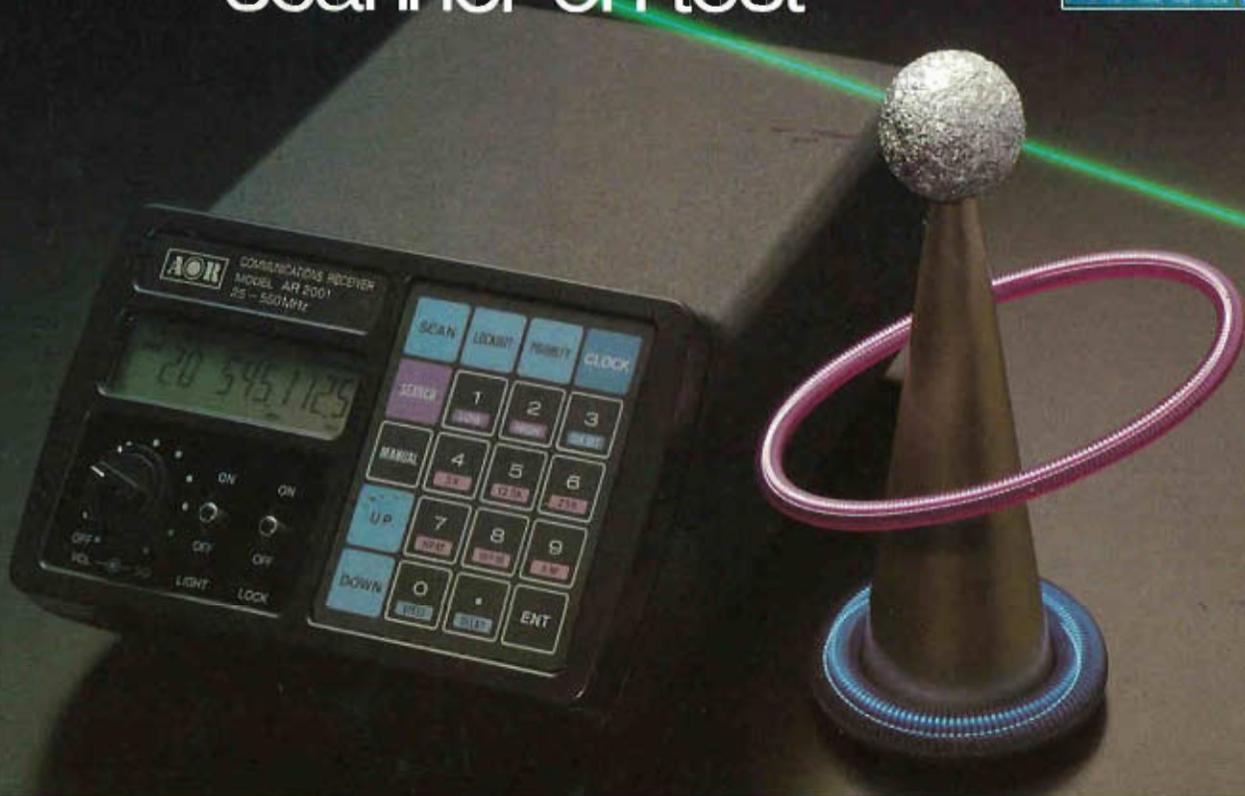
Citizens' Band

Britain's Leading Communications Magazine

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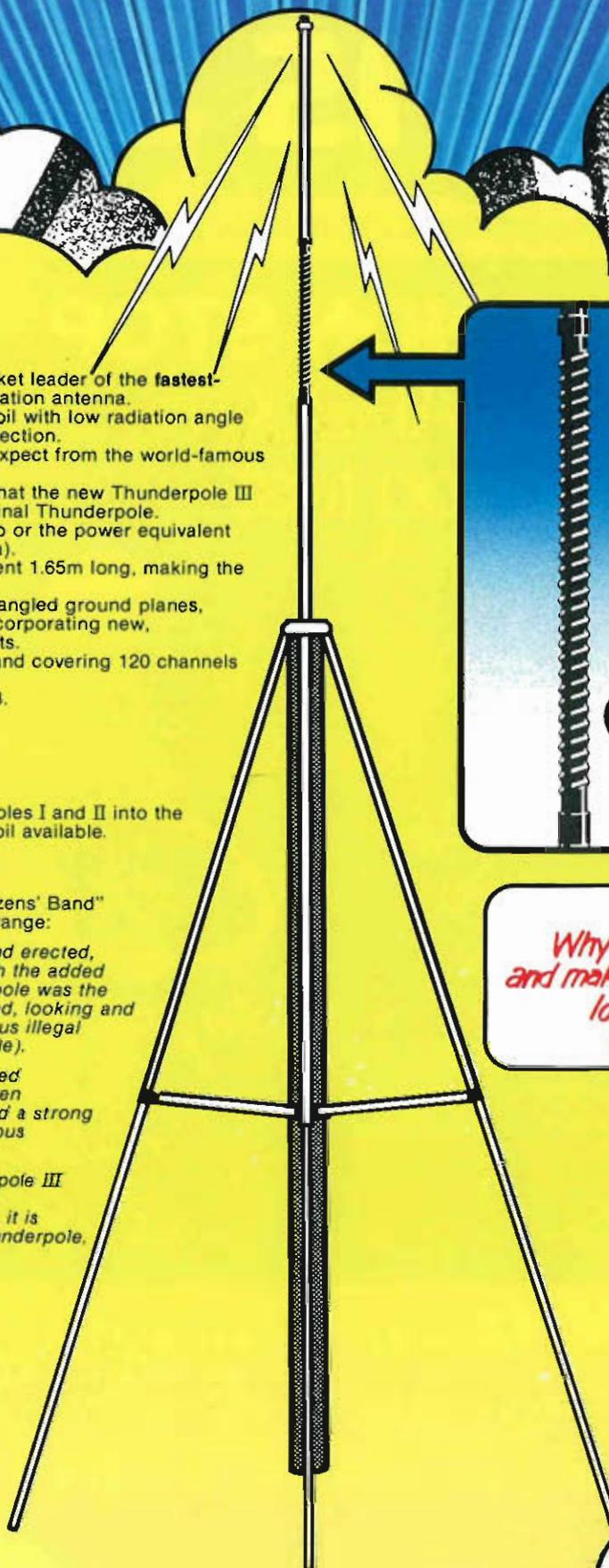
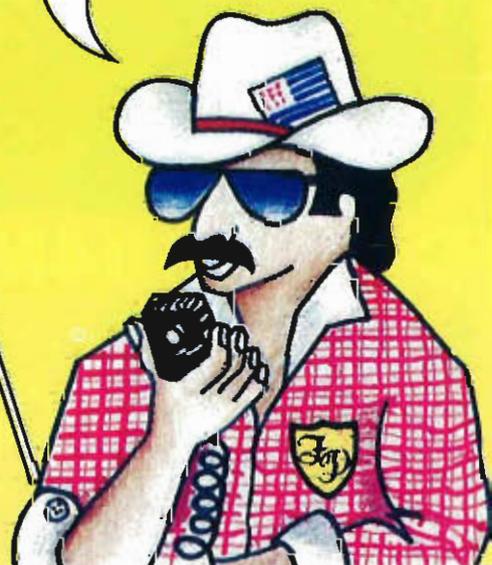
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the Rest!

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Why don't you jump the skip
and make the trip with the centre-
loaded, helically wound
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CB

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Citizens' Band

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Cover this month

The stupendous AR2001 is on the cover. Read the report from Andy Giles on this truly 'state of the art' scanner.

Alan Burke (and I'm not going to say anything more) has stepped into the breach left by the breakdown of our usual page 3 writer and has sent this contribution for your entertainment.

In deepest Africa, a witch doctor had a consultation with a very sick patient. The sufferer described his malady and after some consideration the witch doctor produced a leather thong and explained that one inch was to be chewed three times a day after meals.

A week later, the patient was back, complaining that although he has followed instructions, he still had the malady — despite the thong being all consumed.

The witch doctor thought about it and finally said "I can't understand it — the thong has ended but the malady lingers on"!!!!!!

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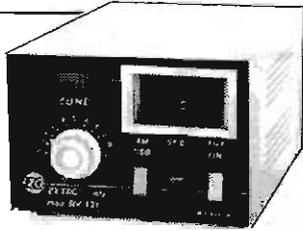
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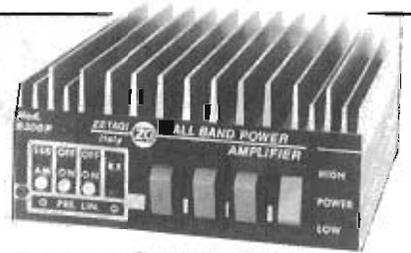
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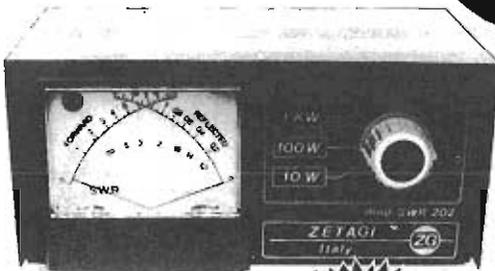


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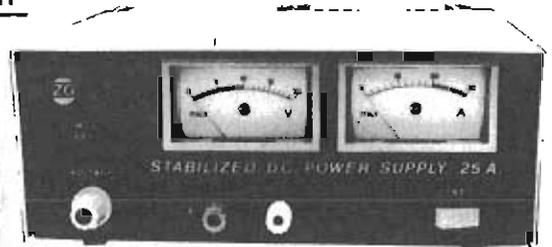
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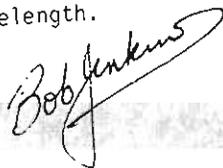
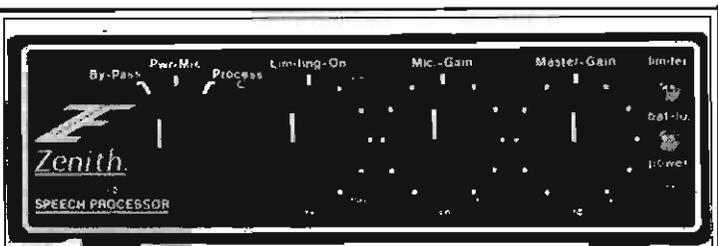
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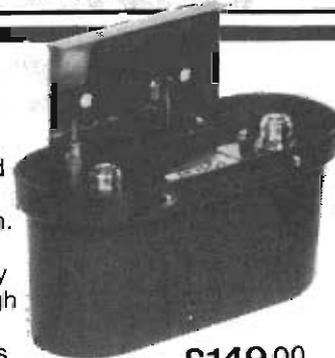


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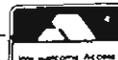
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UPDATE

NEWS

NEWS FROM THE WORLD OF CB
NEWS FROM THE WORLD OF CB
NEWS FROM THE WORLD

It's all happening at Citizen's Band at the moment. No sooner had we started packing for the move to Hemel Hempstead (something that is, mercifully, over) than the call came down from on high to present myself in the boss's office.

Do you remember that feeling at school, of standing outside the headmaster's office? Well, the feeling is the same! Fifteen years hasn't dimmed the sensation.

After wondering if it were just the sack, or something worse, I was delighted to hear that I have been promoted. (Believe me, it came as a bigger surprize to me than it does to you!). I am now group editor on Citizen's Band and two other magazines, one about crafts and the other about winemaking and home brewing. I am not sure of the connection, but Grey Beard reckons he's got it worked out. The common link, he thinks, is cheese. You need cheese and pickle butties for those midnight modulations, cheese making is a craft and also an essential ingredient for cheese and wine parties.

I'd prefer to believe that it was my talent that was the linking feature, rather than some resemblance to, or knowledge, of cheese, but there you go, better not look a gift promotion in the mouth.

I will still be closely involved with Citizen's Band, and I am glad that I am not leaving CB altogether. I have been involved in CB and CB publications for over five years now and would hate to have to say goodbye to either the magazine or the

people that I have met over the years.

So, you don't get rid of me that easily. Until we finalise our plans for Citizen's Band, Keith Townsend, one of our regular contributors, will be acting as editor and taking the work load off my shoulders. He has been responsible for most of this issue and, with his background, should be able to manage at least as well as me, if not better.

The trouble is, no-one has actually told me what a group editor does. I have a nasty suspicion that it means that you do three times the work for *not* three times the money, but time will tell.

I and the CB office are at least settled into our new home and very grand it looks at the moment. But I have yet to junk it up with the paraphernalia that seems to go with the CB office. By the time the rig's set up, all the review equipment is knocking around and we have had a few panics, it will end up looking the same as the last one. A mess.

The other thing that worries me is that I will wear the right hat at the right time. Three titles are two too many at times, when the pressure starts biting, so you will have to forgive me if you start finding articles like embroidering a rig cover or making wine from microphone leads. (Second thoughts, if you do make a good wine from mic. leads, let me know and send me a sample).

Yours, drunkenly from the brewing room,

Sue Sharp.

AMers beware!

The Radio Regulatory Division of the Department of Trade and Industry are currently looking at an order under section 7 of the recent Telecommunications Act to prohibit the advertising, possession and use of non-licenceable equipment and accessories.

Previously, it was an offence to operate such equipment, and for a successful conviction, as many old CBers will be aware, it was almost

News from Natcolcibar

Steve Donahue of Natcolcibar called into the Citizens' Band office after attending a recent R.R.D. meeting to give us the latest on Natcolcibar and its activities.

Steve has been very active on the European CB scene (and will be attending the next European CB Federation meeting on 20th October in Belgium) and he and Natcolcibar are still working hard towards a standard CB system for Europe.

Their hopes had been dashed slightly by the C.E.P.T. adoption of TR/20. The original C.E.P.T. suggestion for a CB system (made in 1973) included

Natcolcibar

The Voice of Citizens Band radio users



FCC frequencies and AM/SSB modes. The new document, published in September 1983, allows for FM only. Since the recent changes made to some individual European systems, like France which

necessary to be caught with one's finger on the transmit button. This meant that equipment was often just confiscated and no summons made because of the difficulty of proof. However, this new order, when effective will mean that possession of, say, an AM CB set or a linear amplifier, will be sufficient. We are, of course, pressing for details of this and will be letting readers know the outcome as soon as possible.

has recently adopted AM, this makes harmonisation increasingly impractical.

In campaigning so actively in Europe, Natcolcibar are adding their voice to the 20 million CB users in Europe and these voices are receiving a sympathetic ear at the European Parliament.

As a representative of many CBers in this country, as well as abroad, the public relations officer of Natcolcibar has asked us to point out the Natcolcibar constitution establishes their aim 'to campaign for amendments and additions in the current UK legislation, to attend the proper allocation and administration of the licence fees paid in this respect, to assist and protect the licence holder in the operation of his or her station(s). Roy Thornley has also asked that I point out the Natcolcibar is the only recognised UK CB users representative within Europe, both via the European Parliament and the European CB Federation.

If you are interested in learning more about Natcolcibar and joining its campaigns, please write to either 270 Hurdfield Road, Macclesfield, Cheshire, SK10 2PN, or 430 Westwood, Windmill Hill, Runcorn, Cheshire, WA7 6LL.

Getting together

After a dearth of news on monitoring groups and similar organisations, we've had a load of stuff all arrive together. So here's some news from three groups.

First off is the M.S.G.B. This is a national monitoring group that has been founded by some ex-officers of another organisation, so they certainly have the experience to get this one off the ground. It was launched on 1st January by George Marks, who is acting as chairman.

Units are now operating in Surrey, Kent, Bucks., Hampshire, Lancs., Co. Durham, Hull, Middlesex, Norfolk and London and are forming good relationships with local emergency services and the police in their area.

Membership of the Monitoring Service of Great Britain is open to CBers over 17 who can offer some of their time regularly to monitor channel 9 and to offer assistance when they



Monitoring Service of Great Britain

can be of help. Membership fees are an initial £1 on joining and a further 50p a year after that.

As M.S.G.B. is a national organisation, there is a

network of both national and local officers who look after organisation, training, administration and publicity. These officers are elected by the membership and are directly answerable to the monitors who form the organisation.

M.S.G.B. are recognised by Natcolcibar as a centralised co-ordinating group for the monitoring organisations and are therefore asking all groups, no matter what their size, to affiliate with M.S.G.B. Together, they hope to present a unified campaign for the legal protection of channel 9. To back this, statistics collated by M.S.G.B. will be forwarded to Natcolcibar so they can be circulated to government departments etc.

M.S.G.B. are actively seeking members who have a first aid qualification to join a specialist division who can offer medical advice and attend public functions.

For more information, please send any enquiries (enclosing an S.A.E. if possible) to M.S.G.B., 18 Shepherds Way, Selsdon, Croydon, Surrey.

Next group is the Community Emergency Radio Team of C.E.R.T. in Dyfed, Wales.

The value of a communications facility in a rural area is greater than that of an urban zone, as people, telephones and boxes, and emergency services are fewer and further between. Being able to link these communities to facilities in more populated areas is one of the aims of C.E.R.T., whose coverage extends over the two extremes. C.E.R.T. is recognised by the county council emergency planning office.

The organisation is run without constant monitoring of the emergency channel, as channel 9 is manned

when the team is in action. It is organised on an area, district and regional/county level and members are trained in both radio procedure and map reading and can set up an emergency centre on request. Call out procedures and emergency action is clearly laid out in the C.E.R.T. manual.

C.E.R.T. are currently looking for members in the Dyfed area to strengthen their teams. Please send all enquiries to M. Smith-Gosling, Communications Officer, 2, St. Anns Head Lighthouse, Dale, Haverfordwest, Dyfed. SA 62 3RS.

We have also had some more information from A.L.C. — Active Line Communications in Blackburn.

Previous mentions in Citizens' Band have resulted in an increased membership and more teams have been established, with a particularly good response in Scotland. Derick Metcalfe particularly wants to clear up some misconceptions. He says "many CBers fear that we are trying to dictate who should have priority (in our operations) and get hold of the wrong end of the stick before learning what our organisation is about. There has been a lot of thought gone onto operations like ours. We are trying to encourage CBers to realise what CB radio has to offer as short range communication for the many housebound and lonely."

Derick is looking for a CBing couple with the names ALice and ALBERT to join A.L.C. and receive a special award.

For more details on A.L.C. and A.L.E.R.T. and the 'names' award, contact Derick Metcalfe, 3 Baker Street, Blackburn, Lancs.

CB

Bremi Competition

We are pleased to be able to announce the results of the Bremi competition that was featured in the April edition of Citizens' Band. Sorry there has been such a delay in announcing the answers, but Geoff Wilding of Bremi, who was on the panel of judges, has been away on several business trips which delayed our final selection.

As always, the response to the competition was very good and we had some very imaginative slogans from you all, as well as your orders of priority for a good breaker.

Unfortunately, also as always, there were a few of you who couldn't be bothered to read the instructions properly and we had some forms returned with just one box marked or several ticked. But most of you got the gist of it right and many of you came close to the judge's selection. This was, in order of priority:

- A good breaker:
- Knows the licence conditions and follows them,
- Gives a good example, especially to younger breakers,
- Follows the CB Code of Practice,
- Respects the traditions and customs of CB,
- Has a good understanding of his/her rig and how it works,
- Belongs to a CB club,
- Belongs to one of the

emergency or traffic help organisations and

Knows all the 10 codes, Q codes and the lingo.

First prize winner was Mr. F.W. Bullock of Eastwood in Nottingham, who wins a Bremi 5-7amp power supply, a Bremi SWR meter and a Bremi frequency counter. Mr. Bullock's slogan was 'I choose Bremi equipment because it is good quality gear you can fit and forget'.

Second was L.J. Brice Esq. of Chard in Somerset, whose answers also agreed with the judge's. His slogan went like this 'I choose Bremi equipment because you cannot better the best and Bremi is "brill" '.

Third was Mick Galliers of Brickets Wood, Hertfordshire, whose slogan reads 'I choose Bremi equipment because I think my rig and I deserve the best supplementary electronics available.' This was a great slogan, but Mick's selection differed slightly to that of the judges, transposing feature 6 and 7.

Goodies for the second and third prizewinners are as follows; a 5-7amp power supply, an antenna matcher and an antenna switch for second and a 5-7amp power supply for third position.

Bremi will be despatching the prizes shortly and will also be organising the promised 50p voucher for each entrant.

Congratulations to all the prize winners.

distributing CTE antennas and accessories nationally. Equipment will also be available from their mail order department.

Of particular interest is the range of antennas. The Diamond series comes in a range of colours, with the base loading available in such glowing tones as red and green. Also colourful is the marine antenna which is a striking blue and should attract some attention from both boating breakers and fibreglass car owners.

CTE returns

After an absence from the CB scene of some time, Italian CTE CB equipment and accessories are finding their way back on to the market. Although CTE equipment has been very popular in this country and has great success in Europe, the marketing and distribution has been less than effective in Britain.

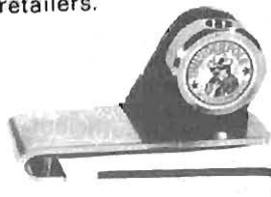
But now Telecomms in Portsmouth have stepped into the breach and will be

Hatchback!

This snail-like beastie is, in fact, a hatchback mount for antennas from that well known base antenna company, Freeman and Pardoe. It is of course for mobile antennas — you won't get far trying to bolt your Thunderpole onto the motor with this, but it is a particularly secure mount that is especially good for

top and centre loaded antennas.

The usual retail price is in the £5.50 bracket and it is available from CB retailers.



Grey Beard's Gleaning

Well friends, it's my turn again, so sit back and suffer/enjoy as you wish! I have told you how W.T.A. Electronics Ltd., of Hellesdon in Norwich, had loaned me a 48" 'Dial-a-Match' to fit to my w/chair. I have now tried out this antenna on three different rigs, and can only say that all concerned were absolutely delighted with the improvement in their Tx/Rx performance. Definitely top of my list at the moment! However, I am always ready to hear of your set especially with regard to twigs.

Lest any of our bed-ridden/house-bound friends think that I have forgotten them, my friends at "CeeBee Electrical", Sidcup, Kent., assure me that the Les Wallen SATURN base antenna is just about the Bees Knees, I am eagerly waiting to hear from you out there that are using the newly legalised centre loaded base station twigs.

Comments on the type of power or compressor mikes you are using are urgently required so that I can advise the many people who ask for my advice. In the past, I have used the incredible 007, and a wide variety of Turner microphones, Blue Meanie of Telecomms, Portsmouth strongly recommends that the Sadelta range are worthy of your consideration. If you are a dealer that stocks a 'goodie', let me know!

I should now mention a 'goodie' that I've had my hot and sticky little fingers on this last couple of weeks.

This is an Electronic SWR audio-alarm, by 'PG Electronics' of Italy. This device has been lent to me by "See no Evil" — he uses it as part of his base-set up. It has small raised markers at 1, 2, 1.5, 1.2, 5, 3 and Infinity; together with a raised pointer on the central knob. Until the VSWR is showing correctly, a regular 'pip-tone' is heard; when the tone ceases the VSWR is as shown. This version does need to be wired to a 12v source, though I've no doubt there must be an English version that is 'self-contained' somewhere???

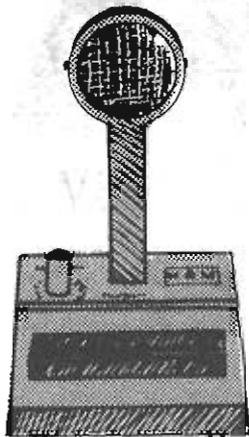
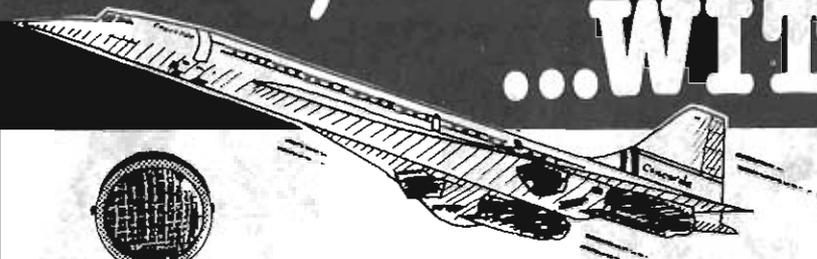
Does your local CB dealer have easy/impossible access for wheel-chairs? Write and let me know how you manage: is your local club keeping an eye on you? Well, tell me then so that they can get a mention!!!

I look forward to hearing from you all, either by letter, cassette or even braille, my good friend "See no Evil" happens to read by this means. So get your comments, views or even requests for specific information, rolling in (if nothing else — it pleases the editor [She that must be obeyed] happy! — Crawler. . Ed!)

So that's me back on the side for another issue, so take care, because we care.

The Grey Beard

UP, UP AND AWAY... ...WITH DIALS



TW-232 DX The exclusive base station microphone with speech compression amplifier is properly improved version of the TW-232S. A lot of striking features make this microphone suitable for use with any kind of communication equipment. The new acoustical design of the microphone housing, and the high permeability protection frame result in a better speech response. A new mike cartridge type with radio communication adapted response curve has been used. The incorporated tone control enables easy pre-emphasis adjustment in FM. But the very reliable shielding against strong high-frequency field-strength



HM014.
Standard
microphone
Ham International
with 4 pin plug.
Dials Price £8.50

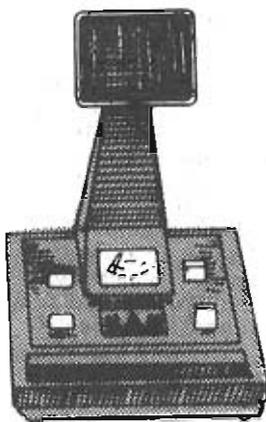
distinguishes this TW-232DX still more from other conventional microphones. Delivered with easy-to-handle "push-to-talk" switch. The TW-232DX is another HAM INTERNATIONAL exclusive product.
Dials Price £43.50

RELAX. Rugged, but easy to handle pre-amplified mobile microphone. The FET-type audio amplifier circuitry has a characteristic of low power consumption by a 9V standard battery, but has also a unique feature that allows an extra power source. It incorporates a ceramic



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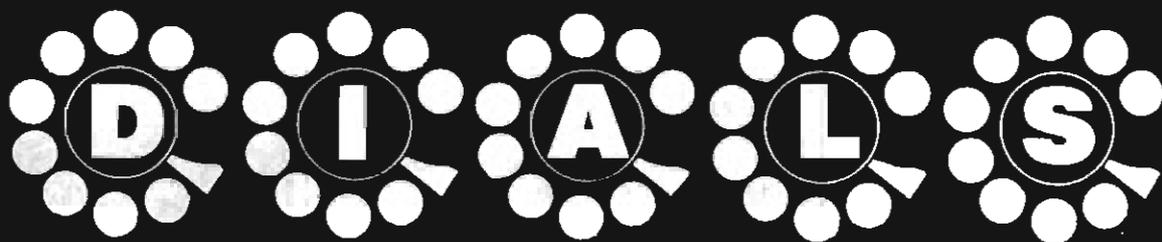
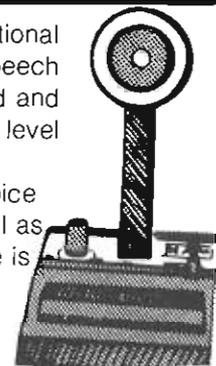
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Smart Alec's monthly dip into the problem postbag.

QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS

Broken up

From Kimbo, of Chesterfield, Derbyshire comes an all too common problem."

Q I run a legal base station and live in an area which is absolutely packed with breakers. To reduce the likelihood of jamming each others signals we recently agreed that when working a local breaker we would all use low power and this is where my problem comes in.

When I use full power the rig seems to work perfectly but when I switch on the 10dB attenuator other breakers tell me that my signal becomes broken. Sometimes I am there, sometimes not. This problem seems to occur over even the shortest distance and even occurred when I tested it by transmitting to my brother's car, which was parked outside the house at the time.

Any suggestions please?

A Your problem appears to be related to the attenuator circuit. You do not say which rig you use but most rigs are attenuated by means of a resistor, which is by passed under normal operation. Pressing the low power switch causes most of the power to be used up in the form of heat by the resistor, leaving only a small amount to be radiated via the aerial.

I suspect that you have either a faulty resistor or a poor contact, either at the resistor itself, or at the switch, the contacts of which may also be dirty. Try touching up the soldered joints in the circuit and, if that does not do the trick, replace the resistor, making sure to use one of the same value as the one you are replacing.

S.A.

Buzz

A power supply problem from J. Harrison, of Wisbech. . .

Q I use a Mustang 2000 rig, which works well when mobile but which gives trouble every time I operate base. The moment I key up from home other breakers tell me that my

signal is overlaid with a heavy buzzing noise, though when I tried it at the home of a friend it appeared to give no trouble.

A Your rig is not to blame, Mr. Harrison. This sounds like the old, old story of an inadequate power supply unit.

During transmission the current drawn by the rig rises and some of the smaller p.s.u.'s are working overtime to deliver enough. Has the rig been tweaked? If so, the current required will be even higher, increasing the strain and leading to exactly the symptoms you describe.

The simple answer is to buy a p.s.u. with a higher amperage rating.

S.A.

Too Long

Way out in the wilds of Oxfordshire Ted Preston has been discovering that theory is all well and good: in theory. . .

Q I decided to build my own half wave dipole and I reckoned that since 27MHz. is known as the 11m band, the aerial should be 5.5m long. So, having built it out of aluminium tubing I find that nothing I do will create a good SWR.

A Your principle is correct but I suspect that you have not looked deeply enough into it. A great many factors determine the final performance of an aerial. The SWR will vary with changes in height above ground and the thickness of tubing used can also have an affect.

A quick calculation would show that the wavelength of required is

Not the rig's fault!



neither to 10.7MHz and, since the signal is developed on the outer surfaces of the aerial, the outside diameter of the tubing will affect the final resonant length. The thicker tubing the broader the frequency band over which the aerial will resonate.

As with commercially produced aerials, siting is all important in keeping SWR to a minimum.

Fortunately it seems that you have made the aerial a bit too long and the obvious answer is to trim a little at a time, from each element until the best possible SWR is attained. Do not worry if, at the end of the exercise the two elements are of slightly different lengths. So long as the SWR is reasonable (say around 1.5 to 1) your aerial should perform properly.

S.A.

Rotel Range

P.J. Towers, of Wolverhampton asks the age old question. . .

Q How can I adapt my Rotel rig so as to reach out the forty miles between my home and my brother's?

There is nothing that will guarantee increased range from any rig.



A There is no way to guarantee the range you require. Adjusting the power amplifier stage of your rig will increase the output slightly, but may place considerable strain on the p.a. transistor.

Even with such a modification it is unlikely that you will gain much, since effective range is governed by so many different factors, such as the number of people on channel at the time and the surroundings in which you live, the height and type of antenna you use and the same factors apply in respect of your brother's station.

At a quiet time you may be able to copy each other, though this is by no means certain. Your chances during busy periods are virtually zero.

S.A.

There was I

A real tricky one, this time, from a lady breaker. Miss C. Roberts, of Gravesend suddenly found herself all alone and broken hearted. . .

Q When, during a conversation, my rig went silent I at first suspected

that the receiver had become faulty. The next day I bumped into the breaker with whom I had been in contact at the time and discovered that he had lost my signal at the same time. I checked the p.s.u. and aerial by using another rig and the results were perfect, though when I went back to my own rig, a Fidelity 1000, I could not make contact at all.

A Since both sides of the rig appear to have developed a fault it seems that you have a problem somewhere within those sections which are common to both and I have a shrewd suspicion that the real problem lies in the phase-locked loop.

I have come across just one single example of the fault from which I believe your rig is suffering, and that on a rig having the same chassis as the Fidelity 1000. When I checked it on a frequency counter I found that it was transmitting around 22MHz., and that the relationship between transmitter and receiver changed every time I selected a new channel.

I am sorry to say that if your rig has the same fault the only remedy is a new phase-locked loop unit, which may well cost almost as much as a new rig.

I suggest that before looking much further you get the rig checked on a frequency counter. It would also pay to check that the contacts behind the aerial socket are clean and intact, since a disconnection at this point will prevent both transmission and reception.

Many rigs, the 1000 included, will not receive if the microphone is not properly connected, so check that the mike lead is properly attached at both ends and that the socket connections in the rig are sound.

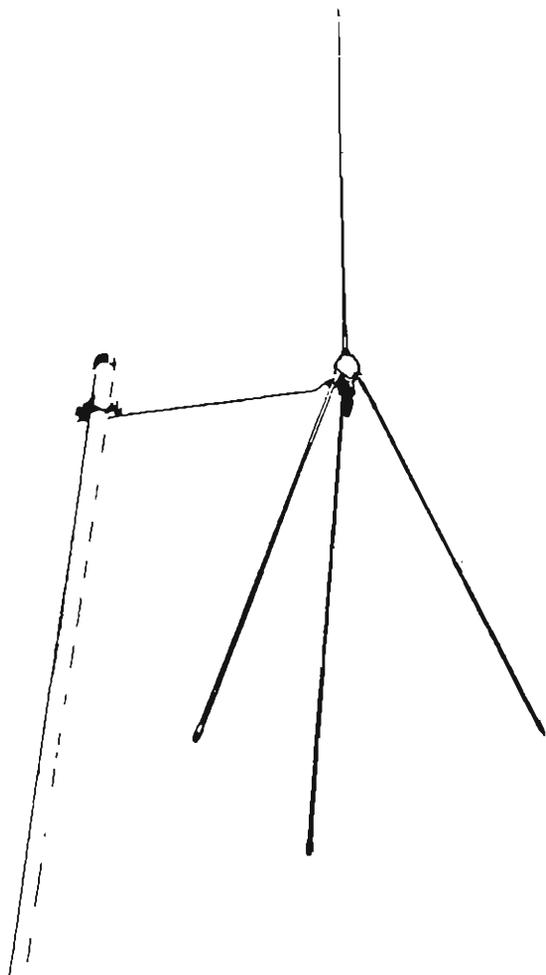
S.A.

Trouble with ppl?



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From Citizens' Band, July '84.

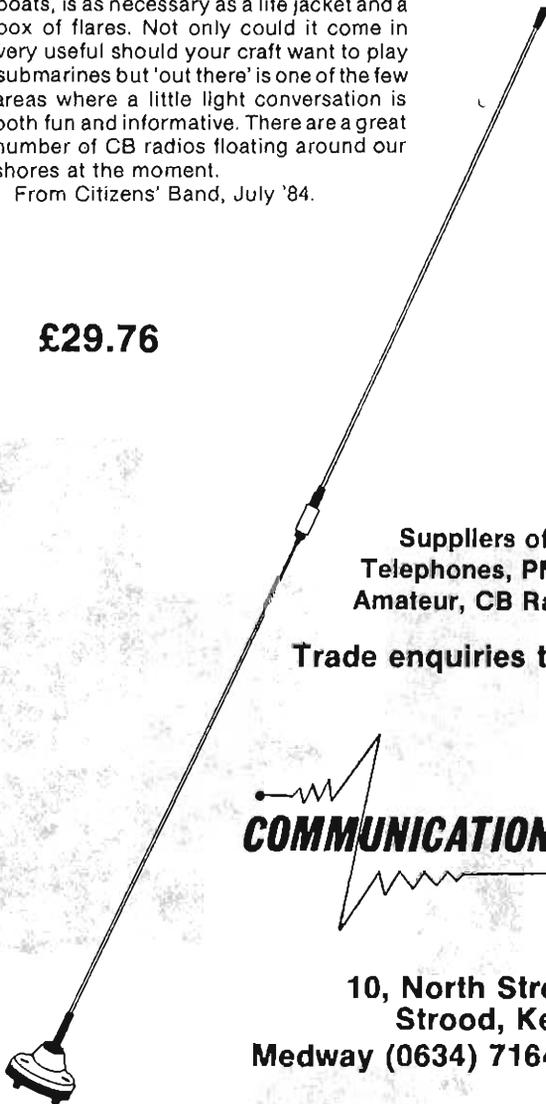
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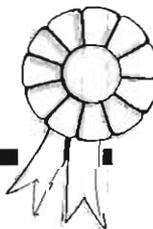
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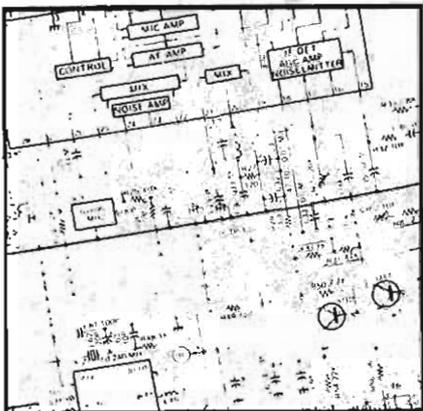
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CHANNEL CHECK



Mark Phillips of Ashton-Under-Lyne has a modification that many breakers could find useful. We haven't tried it ourselves, but Chris Peterson reckons it's O.K. We must remind you that this modification shouldn't be attempted unless you understand what you are doing and are familiar with a soldering iron.

I have here a modification for most C.B. rigs in use that involves changing the channel 9 facility on rigs to a channel 19 facility. It instantly springs to mind that this mod. is of most use to mobile breakers who monitor 19 for information and who find it awkward to change channels whilst on the move.

In its simplest form the mod. requires the changing over of one wire on the synthesizer chip. It would be prudent at this point to say that this mod. only works on rigs using the SANYO LC7137 chip. Those more adventurous among you can also alter the channel LED display to suit.

Anyhow, in the immortal words of the man, this is what you do. First, locate the synth. chip (it has SANYO LC7137 written on it to make it easier for you). Next, locate the cutout at one end of the chip. That done, look at this little diagram below.

The bottom row of pins are 1 to 10. Now locate pin 9. Also look for the wire attached to that pin. Follow so far? Good.

Now then, remove the wire from pin 9 and replace it on pin 8. Now connect up the rig and switch on. Flick the channel switch over and hopefully there will be voices shouting '19 for a copy'.

As I said before, this is the simple part and no more needs to be done. However, those perfectionists among you may not like the display reading the wrong channel. This can be rectified by following these guidelines.

I say guidelines because the display arrangements vary from rig to rig.

If you look at the channel 9 switch itself, you can see that one side takes care of the channel switching, whilst the other switches over the display. The display side is the side you must tackle.

From this side of the switch, a wire goes to a bank of diodes (as in the diagram).

From these diodes, the supply carries on through a resistor to the appropriate segments on the display. First of all, check which way round the diodes face. Now make up a set of resistors and diodes like this

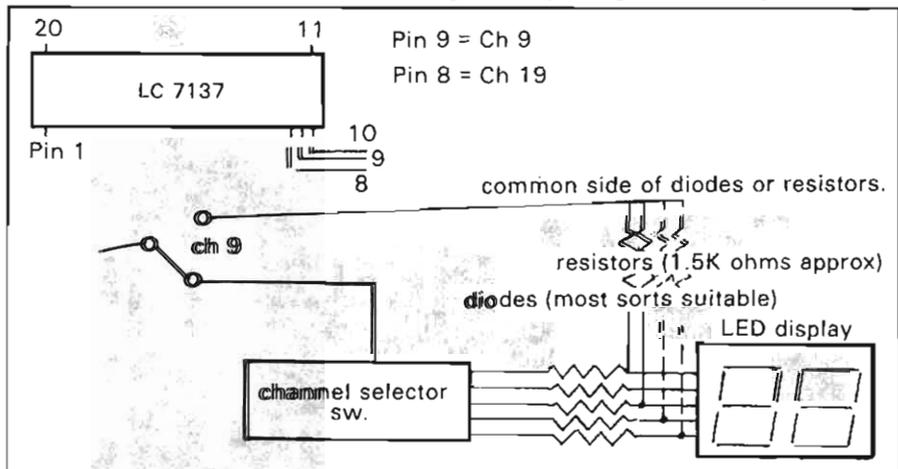


Once this is done, wire up the common end of the arrangement as in the rig. Now switch on the rig and, by probing the lines to the display, find the wires which feed the two segments to give a 1 in front of the 9 on the display when the switch is moved over.

It should be clear that this part is strictly for those people who know what they are doing.

Hopefully, this mod. will come in handy for quite a few people — the number that keep asking me to modify their rigs show that this is a popular mod.

Citizens' Band can take no responsibility for mistakes following this modification, or warranties and guarantees being broken.



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Keith Townsend has a look at one of nature's wonders and discusses what it can do

STRIKE

What is your reaction to a good old fashioned thunder storm? Do you marvel at the beauty of nature, or are you one of the many who switch off everything in sight and hide the teaspoons? It is common knowledge that lightning can cause terrific damage, but is it really the monster that superstition might have us believe?

To answer these questions and to devise an adequate means of protection against the real, as opposed to the imaginary, dangers we must first examine the likelihood that we, or our possessions, will fall prey to this wondrous phenomenon. Statistically the chances are not very high, though this information will be of little comfort to the few who have suffered its wrath. It has been calculated that between ten and twenty storm centres pass over any single location within Britain in the course of a year and that the average life of each storm centre is between thirty and sixty minutes, during which some twenty to thirty lightning strokes are produced. Forty per cent of these are cloud to ground strokes, the rest being strokes from one point within the storm cloud to another. So, using the higher figures it is a simple matter to calculate that a given area will be subject to an annual average of about two hundred and forty ground strokes. However this calculation does not take account of the fact that nearly all storms are accompanied by strong winds, which can propel the clouds along at up to thirty miles per hour, which reduces our figure for a given location, say one square mile, to between six and eight ground strokes per year. Taking the size of the average house, we have between two and three thousand houses per square mile, which, if you care to follow the equation through, leaves you with the chance of being hit, on average, once every five hundred years. The only trouble with relying on statistics, however, is the fact that you have no way of knowing when the five hundred years are up, so far as the ground now occupied by your house is concerned.

Before discussing the means of protecting against lightning we should perhaps examine just what it is that we are to be protected from, since this will lead to a clearer understanding of the measures which we might take. Thunderstorms occur as the result of

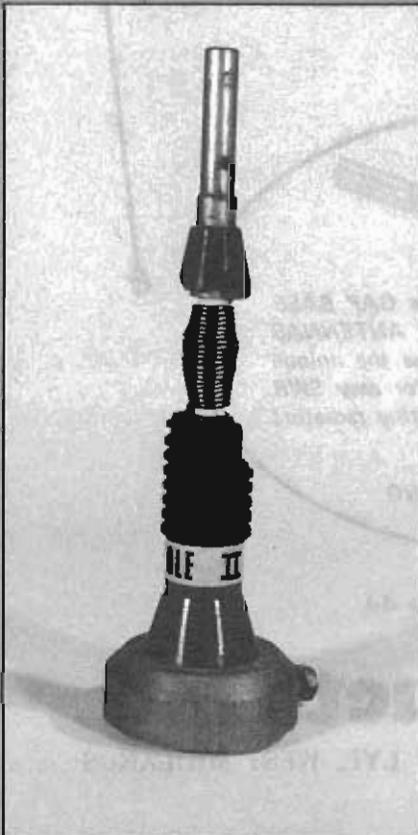
temperature differences within the air, either as the result of cold air meeting warm, or, more commonly, as the result of summer air passing over warm, moist ground. As all school children know, heat must rise and in doing so it will carry vast quantities of this ground moisture into the atmosphere, where it will condense to form the cumulo-nimbus clouds characteristic of an electrical storm. Because many such updraughts, or thermals, can occur over a relatively small area a single storm may contain a number of storm centres, each capable of a number of lightning flashes. As an accompaniment to these clouds the static voltage which is always present in the air around us can rise by as much as two hundred times, giving rise to the sensation that you can "feel" a storm, as the static affect clothes and hair and even causes perspiration. As the storm cloud deepens, taking its customary 'anvil' shape, a massive electrical field develops within it, appearing positive at the head and negative at the base of the cloud, to the extent that the usually negatively charged earth appears positive in relation to the cloudbase. At this point I should perhaps assure you that, contrary to the evidence of your eyes, lightning strikes upwards, from ground to cloud.

Let me explain. In a field of direct current, which lightning is, the current flows from negative to positive, i.e. from the base of the cloud to the ground. The visible part of a lightning stroke, however, is not that current but the accompanying arc, which flows in the opposite direction, i.e. ground to cloud.

It is also worth mentioning that each storm centre is capable of storing sufficient energy to power the average home for up to two years, so if you are looking for cheap electricity start thinking up a way to capture it.

All this theory is all very well but what are the practical effects of lightning and what to do to reduce the damage in the event of a strike? The two main characteristics of lightning, so far as we are concerned, are that the current will take the easiest possible path to earth and that it has a nasty habit of striking the highest available object. Combine these two facts and the presence of a well grounded antenna and mast can actually reduce the likelihood of damage to your home. This fact generates considerable argument, since it would appear to some that to

This Thunderpole base antenna was struck by lightning. This was the result.



EALIGHT

ground an antenna system is to invite a direct strike, whilst others maintain that the presence of a system so closely resembling a conventional lightning conductor reduces the likelihood of a strike, since it has the effect of "bleeding off" the air's electrical charge. Remember that the purpose of a lightning conductor is not to attract electrical energy but to discharge it efficiently and that is why I am a firm believer in grounding any antenna system as well as the geological conditions permit.

The first step towards safeguarding any antenna installation is to ensure that its supporting structure is adequately grounded. It is not sufficient to knock a single stake a couple of feet into the ground and then to attach it to your tower or pole by means of a length of thin wire. Wherever possible three or four conductors should be driven as far into the ground as possible. No-one has yet been able to determine just how far underground the true electrical "earth" lies and you would not be overdoing things if you were to sink your conductors as far as fifteen or twenty feet. When choosing the right material for these conductors external area is more important than mass. Copper tubing of a reasonable outside diameter is ideal for the purpose. Your ground rods should then be interconnected and attached to the tower by the shortest possible length of a substantial thickness of copper wire. If you consider the sets of jump leads available from most garages, you will appreciate that the heavy ones are more efficient than their cheaper, thinner equivalents. This is because a greater current may be discharged via the greater surface area and the same is true when discharging electrical energy from the air.

In the event of lightning striking a mast, or any other object for that matter, the electrical discharge is accompanied by both thermal and mechanical effects. A sound earth, in reducing the electrical effect, can significantly reduce physical damage. Most direct strikes result in some scorching at the point of contact, together with possible physical distortion but I offer as evidence the case of a friend, whose extremely well grounded tower failed to display even the slightest scorch mark after a direct hit, leaving us unsure to this day as to the exact point of contact.

It is also important to ensure that the outer braid of your coaxial cable is

grounded to the mast since very high levels of static can build up on the coax during a storm. Unless the coax is properly earthed it is not advisable to disconnect it from the rig, merely to leave it dangling in space. Imagine, if you will, what is likely to happen to any static charge present on the coax when you come to reconnect it. Either it will be discharged through your body as you take hold of the plug, and I am assured that this is a most unpleasant experience, or it will be discharged into your rig when the plug is reconnected, with possibly expensive results. If the case of the rig is properly earthed it is not, strictly speaking, necessary to disconnect the coax, since, except in the unlikely event of a direct strike, any charge on the cable will, by following the least line of resistance, be discharged through the outer casing and its attendant earth. If, on the other hand, you are unhappy about leaving the coax attached to the rig then the correct procedure is to fit a standard chassis socket to a steel bar or plate in such a manner as to ground both the inner conductor and the outer braid. Ensure that the plate is securely grounded and fit your feeder to this socket each time you disconnect it from the rig.

One of the most common difficulties encountered when installing earth systems is that of a shallow layer of soil over a hard bed of rock. It is not sufficient to leave just a two foot earth stake on the justification that you could not dig through the rock, neither is it necessary. Earthing rods operate just as efficiently when laid horizontally as they do in any other position and offer the added advantage that they may even assist your signal. It is not at all uncommon among amateurs to dig grooves at right angles to one another in the lawn, in order to bury lengths of copper wire in the form of an earth "mat". Where ground conditions dictate that your earth straps be laid horizontally the dissipation of current will depend on the length and diameter of the material used, in the same way as with deeper installations.

When considering protection against the effects of lightning it is as well to remember the physical effects as well as the electrical ones. Make sure that the antenna and its mounting structure are well secured and that all bolts and brackets are tight. It would be rather futile to ensure protection from the electrical

aspects of a storm, only to see your antenna blown through the garage roof for want of secure mounting. Another aspect which should be treated with care when considering bad weather is the junction between the aerial and its feeder. Lightning, like all other forms of electricity, is conducted far more easily on a wet surface than on a dry one, so take care to ensure that the junction is waterproof and that water cannot seep from the antenna onto the conductive surfaces of the coax.

In general terms you have little to worry about from lightning. You stand a better chance of winning the pools than you do of suffering serious lightning damage but, considering the investment which your home and its contents represent, it is unwise not to be aware of and take precautions against even the most unlikely occurrence. After all, we all pay insurance premiums in the hope that our money will be wasted but we are vary relieved on those occasions when it is not.

When considering the effects of lightning and the damage which it can do it is worth taking precautions with appliances other than your CB rig. Most people are aware of the need to disconnect their television sets from the mains when not in use but how many realise that it is equally important to disconnect the coax. Not many tv antennae are struck by lightning but, should it happen, the possible "flash-over" can easily wreck the set, whilst a direct hit on the house can cause a surge in the electrical wiring strong enough to damage any appliance connected to it.

Always remember when choosing earthing points within the house that it is most unwise to connect any earth wire to either the gas or water pipes. Whilst they may appear to offer a good path to earth they may be connected underground to pipes made of a non conductive substance, in which case they will offer little or no protection.

By and large I take the fatalistic view where lightning is concerned. If it is determined to strike a particular spot there is little I can do to prevent it from doing so. We each face considerably more common dangers daily. Nevertheless I believe that a stitch in time saves nine and a few basic precautions offer protection against all but the most severe effects. Personally my first reaction at the first flash of lightning is to marvel at the beauty of nature.

AUTOSCAN 5000

'The technical performance is unimpeachable... the designers have got it right.'
CB Magazine JUNE 1983

CB MAGAZINE VOTES THE AUTOSCAN 5000

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What CB Magazine said in April...

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The transmitted audio quality was excellent, crystal clear with real punch to it making any sort of power or processor mike totally unnecessary.

Inside, you will find the kind of construction normally found in computers and professional equipment. A marked contrast to imported rigs.

The performance has been a revelation compared to anything we have seen before, and what's more it's BRITISH!

...and in June.

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From the mailbag

J.W. from Sheffield

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S.A.M. from Suffolk

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Filly is elected as local spokesperson and is expected to take a fellow radio enthusiast to task

LADY BREAKERS

Imagine a pigeon with an injured wing, come to settle on a nice green stretch of grass, preening itself a little and enjoying the sun. It lifts its head. It is sitting in the shadow of General Custer, standing proud and lonely with his men. And all around, as far as the eye can see, hordes of advancing Indians. . .

I know how that pigeon felt. Only in my case, it wasn't Custer and the Indians. It was neighbours embarked on all-out war.

I should have known what was coming that quiet golden evening when the telephone rang. Things were too peaceful. It was someone wanting advice — well, I'm used to that, but. . .

"Have you seen it?" squeaked an agitated little voice. "Have you? It's a disgrace, a monstrosity. . . go to your back window and see!"

Mystified, I did. I stood at the window, blinking, and saw immediately what the little voice meant. Towering above the roofs, a soaring aerial. It was like living in the shadow of the Eiffel Tower.

"What can we do, what can we do?" piped the frantic voice, when I picked up the phone again. "Surely there's a law. . ."

Well, there isn't, as such. Only planning regulations, which vary considerably from district to district. And our local council was notoriously lax.

I couldn't even remember having seen a letter from the council notifying me of a proposal to mount an aerial; unfortunately, the council is under no obligation to.

"You must know what to do", the voice urged. "I've seen an aerial thing on that little car of yours. You're one of *them*, aren't you? You must talk to him. . . make him take it down. . ."

Oh dear, I thought. I knew now who the aerial owner was. Not a fellow breaker, but a ham radio enthusiast, and a good friend of mine. I knew the neighbours wouldn't appreciate the difference, though — anyone with an aerial round this way is a radio freak. It took them years to reconcile themselves to their own TV aerials.

I pointed out, gently, to the

indignant voice that if the aerial had got planning permission, there was very little that could be done about it. That unleashed a storm of outrage that I was only able to stem by promising, rashly, to go and talk to my friend. Word went round, and when I left that evening to walk up the road, I was accompanied by a small, bristling bodyguard of hostile neighbours who escorted me to the gate and waited there, glowering.

My friend watched me walk up the path, also glowering. How do I get myself into these things, I asked despairingly of the sky.

I had a look at the aerial, which was mounted free-standing in the back garden, and discovered, quite by accident, that it was situated three inches away from the position marked on the original plan. For a few days, I was the local hero. The council ordered the aerial to be dismantled, and a beautiful friendship dissolved overnight.

But you can't win. My ex-friend was informed, by some mole on the planning committee, that there was a loophole in the regulations on aerials. Free-standing aerials are subject to planning regulations — aerials fixed to houses are not. One day, there it was again, higher than ever, casting a victorious spindly shadow over everyone. The radio ham crowed with triumph, the neighbours fell out over a tactical discussion, and I was blamed for everything as usual.

I can tell you, I was ready to move. The atmosphere was like undiluted rat poison. People watched other people out of their windows, with binoculars. Insults deadlier than any arrow were hurled across garden fences.

And then, suddenly, it was all over. The radio ham, having made his point, decided to leave our sullied county for the purer air of Sussex, and had gone, aerial and all, within a week.

Maybe not quite over. There is still a whiff of suspicion hanging about in dark corners. I think I might be watched. After all, being one of *them*, who knows when I might decide to sprout a monstrous aerial myself? . . .

CB

TWONG

INSTEAD OF JUST SITTING THERE TURNING FLIES INTO HANG GLIDERS, YOU SHOULD BE OUTSIDE LEADING THE C.B. REVOLUTION!

SWAH!

ME DID NOT KNOW THEY WAS REVOLTING!

SSST

GENG

IT'S A QUIET REVOLUTION! C.B.ERS ARE SPREADING! PRETTY JOON EVERYONE WILL HAVE A RIG! MEN, WOMEN, AND YES, EVEN THE ITTY-BITTY CHILDREN...

SOB!

WE GONNA ROCK-ROK

ROCK

HINDA-CLOCK

SHADDAP THAT ROW! I CAN'T HEAR MYSELF THINK!

KAPOW

BZZZT!

ACK!

HAH! RAG-DOLL LET MASK OF INNOCENCE SLIP! NOW ME KNOW THAT YOU AFTER SOMETHING! YOU PLEARY SUEAKY DAME! YOU MAKE GENTLE OL ME MAD!

ME SUSPECT YOU AFTER MY LITTLE VASES OF NEWCASTLE NECTARI!

ME JUS' ABOUT MAD ENOUGH TO COME SLAP YOUR HEAD..!

SOB FWA BWA BWA

BUT ME AM MERCIFUL, AS WELL AS MIGHTY, SO ME WILL SIMPLY TAKE STEPS TO STOP YOU FROM HALF-INCHING MY BROWN AMBRASIA!

ME WILL SLAP IT ALL!

GOOHA GOOHA GOOHA

GOOHA GOOHA GOOHA

NEWCASTLE

SHLHP

RIEF!

NOH!

ME GATHERED SOME REVOLTA'N' LOOKIN' C.B.ERS! NOW ME GOTTA LEAD EM SOMEPLACE!

NOH!

LOOPY GET NO!

YERR ME SLAKED!

TRON TRON ROMP

ME WILL SLAP IT ALL!

GOOHA GOOHA GOOHA

GOOHA GOOHA GOOHA

NEWCASTLE

SHLHP

RIEF!

NOH!

ME GATHERED SOME REVOLTA'N' LOOKIN' C.B.ERS! NOW ME GOTTA LEAD EM SOMEPLACE!

NOH!

LOOPY GET NO!

YERR ME SLAKED!

TRON TRON ROMP

NOW ME AM READY TO LEAD REVOLTA'N' C.B.ERS! HIC!

NOH!

NOH!

NOH!

SHLHP

RIEF!

NOH!

ME GATHERED SOME REVOLTA'N' LOOKIN' C.B.ERS! NOW ME GOTTA LEAD EM SOMEPLACE!

NOH!

LOOPY GET NO!

YERR ME SLAKED!

TRON TRON ROMP

ME GATHERED SOME REVOLTA'N' LOOKIN' C.B.ERS! NOW ME GOTTA LEAD EM SOMEPLACE!

NOH!

LOOPY GET NO!

YERR ME SLAKED!

TRON TRON ROMP

HOLD IT, GOLDLOCKS!

US C.B.ERS HAVE HAD ENOUGH! WE WILL NOT BE LED BY A TRANSESTITE LOOPY, IN SO WE ARE HEREBY REVOLTING!

RIE!

AN' JUST LIKE ARTHUR SCARBILL, WHO IS ALSO REVOLTING, WE HAVE DECIDED TO SUSPEND YOU!

EH?

AT LEAST IT WILL KEEP YOU OFF THE STREETS!

KROKE

HWP-HWP

HWP-HWP

HOLD IT, GOLDLOCKS!

US C.B.ERS HAVE HAD ENOUGH! WE WILL NOT BE LED BY A TRANSESTITE LOOPY, IN SO WE ARE HEREBY REVOLTING!

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EH?

AT LEAST IT WILL KEEP YOU OFF THE STREETS!

KROKE

HWP-HWP

HWP-HWP

STOP! DESIST! HE WAS ONLY TRYIN' TO HELP! CUT HIM DOWN!

ACK!

HOKAY! HAS ANYONE GOTTA KNIFE?

NO! I DONT HAVE A KNIFE! MASTY SHARP THINGS!

THAT LI'S SHOP ON THE CORNER SELLS KNIVES!

YOU CAN GET 'EM CHEAPER BY MAIL-ORDER!

ANYONE GOT A STAMP!

HOW MUCH ARE THEY?

'BOUT A QUID EACH!

GNASH GNASH

SPIT SPIT

AT LEAST HE'S COME DOWN TO EARTH AND LEARNED THE FIRST RULE OF LEADERSHIP...

SNAP

KREEGAH!!

SCREAM

ALWAYS LEAD FROM THE BACK!

STOP! DESIST! HE WAS ONLY TRYIN' TO HELP! CUT HIM DOWN!

ACK!

HOKAY! HAS ANYONE GOTTA KNIFE?

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SNAP

KREEGAH!!

SCREAM

ALWAYS LEAD FROM THE BACK!



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Dave has a visitor from Germany and reminds us about new postal charges.

COMMUNICATION THE QSL WAY

I had a visit just the other day from Knut Mittelstadt of the Berliner Bear AM/FM QSL Club of Germany. He had news of the BB 1983/84 Contest winners and also some bad news and I'll deal with the bad news first. Knut assures me this information is correct. He has told me that RADAR Custom Cards of Holland has given up printing QSL cards, also that the Super Stinky Club of Germany has ceased trading. Anyway, the news of the contest. There were three classes, the best full colour, 2, best coloured and 3, best black and white/red/yellow (or polka dot) QSL Cards. There were 50 prizes in each class, ranging from membership and 50 club colour cards, through T-shirts antenna switches to records and club lighters. The first 3 in class 1 were Heinz Voge of Germany (1) Terry Webb of Dorset (2) & Daniel of Germany (3). Top of class 2 were Diana Wyles (1) of Devon, Juergen (2) of Germany & Alex Scott (3) of Manchester. The top 3 winners of class 3 were Jennifer Bruce of Viking Radio, Shetland Isles, (1), James Nimmo of Glasgow (2), James also gets a lighter from Class 1, and Dave of Manchester was third. This year's competition runs until April 30th 1985. Again, there are 3 classes, full colour, coloured and black and white QSL Cards. These MUST be PERSONAL QSL cards, NOT club cards. There are 50 prizes in each class again, T-shirts, photography set, 50 club cards, a record, lighter, and 45 other mixed items. Send your entries to Knut, BB 001, c/o Contest 85, NOT ME! To join this excellent German club, send either £3 + 5 personal QSL cards for the mini package, or £8 + 30 cards for a bumper package. Whichever you decide on, it will be worth it as I'm sure you will agree.

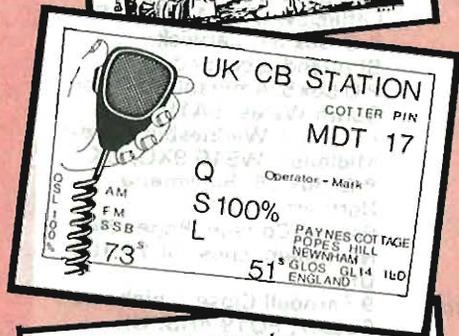
One thing Knut does ask, and I second this, whenever sending cash abroad, always pack carefully, secure the money between some cards and send it registered! I know this costs £1 extra, but it is safer. You can also check if whoever you sent it to receives it by

asking at the Post Office WHEN YOU POST IT for an Advice of Delivery form. This is available on registered items and only at the time of posting. At present the fee is 20p but might change next month. Talking about changes, don't forget that from September, posting out QSL's will cost more! UK rates change from 16p to 17p first class, and 12½p to 13p for second for the first 60 grams only. All other weights & overseas rates will also change.

Okay, time now to mention a few UK clubs that have been in touch. First is the 'Tripe City Breakers' of Padiham. For 10 of your cards plus a S.A.S.E (self addressed stamped envelope) stamped for 100 grams, you will receive a very good package with your TCB number, ID card, exchange cards & invites, certificate, stickers and various other items. The Grey Moors QSL & DX Club of Ebbw Vale offers 6 club cards, G.M. number, ID card, stickers, tourist info, exchange cards & invites & 'extras', all for £1 plus 6 of your cards and a local view card. For £3, 6 cards, view card and a large S.A.S.E. you get the above plus a plastic ID card and use of the PO Box if required. The club cards are excellent and very well designed and printed.

The Britannia QSL Club now has its first news sheet available to members for 50p (UK). To join this club, all you have to do is send 5-10 personal cards (not scraps of paper please) and a S.A.S.E. The Lewes QSL Club was launched recently, costs £1 per year to join. Not quite sure just what you get for this but a certificate and exchanges are mentioned. News from London of the Whiskey Hotel QSL Club. Membership costs £1 + S.A.S.E. plus 5 signed and dated QSL Cards. For this you receive your WH number, ID card, certificate, club cards, stickers, view card, exchange cards and invites. A club stamp is available at £3.50 as are club QSL cards.

To come off this unpleasant subject, some names of QSLers with their own cards who want a mention:



The **Warrior QSL Club** also asks for 5 cards, £1 plus return postage. In return, you receive your W.I. number, certificate, club cards, exchange cards and invites etc. Other clubs with newsletters at the moment are the **Heather Islands** on the Isle of Lewis and the **Viking Radio Group**. The **Viking** is also running a competition for VR members; the prizes are a 'Long Ship' trophy, hence the name of the competition! The aim is to get the greatest number of confirmed DX copies (QSL Cards are so useful aren't they?). A S.A.S.E. will fetch full details, the closing date is 14th January 1985. Membership of the **Heather Islands** is available for £2 plus large S.A.S.E and 5 QSL cards. For this you get your HI number, ID card, a club pencil (nice touch that), 15 club cards, map and tourist info, postcard, exchange cards and invites. Also available are club cards at £4 per 100, a rubber stamp at £3 and club stickers at £1 per 100. For Viking membership, send £4.50 and 10 Cards and you will receive an excellent package that is well worth it.

One thing that still puzzles me is why do some UK clubs ask for both cash AND S.A.S.E? If they ask for money then surely that should cover postage? Anyway, that's my view. One thing that has upset quite a few people recently is the disgraceful habit of some people who are photocopying and using other methods of copying the designs of printed QSL cards. Some do it through ignorance, but others do it so blatantly and without any thought for either the printer or the

QSLer who paid for the card in the first place! I have received several letters from various sources about this topic which, unfortunately, seems to be spreading. Some people do not seem to realise that a design on a card is copyrighted (99% of the time anyway). This means to copy this design in any fashion, without the written permission of the printer (or holder of the copyright) is piracy! Many printers depend on their designs for their livelihood, and don't forget, piracy is illegal! Just read any computer magazine! One other thing, staying with the above topic, is where someone joins a club, gets some club cards and decides that being a member gives them the right to photocopy the club card, or even worse, to take a club president's personalised club card and mutilate it, add their name and address and then to photocopy the (messy) end result. Apart from the illegal pirating, these scraps of rubbish are really slamming the reputation of the UK QSLer in the eyes of the QSLing world. If you receive any of this stuff, either throw it out or send it back pointing out how much harm this sort of stuff can do! an excellent card from **Daryll (Dragonfly)** of **Basingstoke**, a pair of Currie cards from **Dennis (Bombsite) Baldwin** of **Wendover**, a pair of gloss cards from the chairman and secretary of the **Sierra Bravo Charlie Club** of **Liverpool** (more on that later), **George (Sandtank) & Barbara (Mum-Bar)**, a disabled couple who love to hear from you are **Robert &**

Soraya (Necromancer and Isopod Lady) of **Tyne & Wear**. If possible, to help them reply, I'm sure a S.A.S.E. would be useful. A gilt card from **Christina (Lucky Lady)** of **Leeds**, a note and a card from **James Byron (Explorer)** of **Littlestown, USA** to ask for help in his aim of gathering one million QSL cards! All would be welcome so if you can, help him on his way. A set of excellent cards from **Jim (Friar Tuc)** in **Lerwick** and a quick note, just here to round off for now, comes from **Reject of Wales** asking for QSL's please!

As promised, a little about the **SBC** or **Sefton Breakers Club**. This club can be contracted via the chairman, and it meets at 8.00pm each Tuesday evening at the **Nags Head Hotel, Lydiate Lane, Thornton**. A S.A.S.E. will, I'm sure, bring details of the club and costs.

A package arrived the other day from the **Ball-Lightning QSL Club of Germany**. For £8 and 10 of your personal QSL Cards, you receive your BL number, ID card, certificate, stamp, patch, view card, roster, exchange cards and invites. Applications can be sent direct to Germany, but there is a UK Rep, **Dave Sheppard** of **Bristol**. Staying in Germany a moment, I have some details on the **Rodeo QSL Club of Erkelenz**. For 25 DM and 25 QSL cards you receive your Rodeo number, ID card, roster, exchange cards and invites, club stamp and some club QSL cards, also a few other things. **Harold**, who runs this club, can read and write some English and welcomes members



Heinz Vogl *Hexenkessel*

Knoebelstr. 30, D-8000 Muenchen 22, West Germany.

Terry Webb *Rattlesnake*

P O Box 5, Wareham, Dorset, BH20 4JG, UK

Daniel Dampf-Mobil

P O Box 110225, D-8600 Bamberg, West Germany.

Diane Wyles *Roxanne*

29 Siddalls Gardens, Tiverton Devon, UK

Juergen Stockholm 1

P O Box 5524, D-7500 Karlsruhe 1, West Germany.

Alex Scott *Wizard*

1 Farnham Ave. Higher Blackley, Manchester M9 2GN, UK

Jennifer Bruce *Maid Marion*

P O Box 31, Lerwick, Shetland, Scotland. 250 Telford Rd, East Kilbride, Glasgow, G75 0DL.

James Nimmo *Tomita*

Dave D J *Biggles*

7 Railton Ave, Whalley Range Manchester, M16 8AF, UK.

Daryll Hunt *Dragonfly*

21 Dragonfly Drive, Basing. Basingstoke, Hants, RG24 0HV.

Dennis Baldwin *Bombsite*

TF 69, P O Box 29, Great Missenden, Bucks, UK.

George & Barbara *SBC Club*

P O Box 1, Liverpool, L22 4RT UK.

Robert & Soraya Clay-Egerton
Christina *Lucky Lady*

P O Box 4, Whitley Bay, Tyne & Wear, NE26 1BN, UK
2 Ashlea Gate, Leeds, West Yorkshire, LS14 2EE, UK.

James Byron *Wxplorer*

725 Littlestown Road, Littlestown, PA 17340, USA

Jim *Friar Tuc*

P O Box 31, Lerwick, Shetland, Scotland.

Reject

P O Box 5, Ammanford, Dyfed, South Wales, SA18, 3BN.

Tony Yewen *Rambler*

P O Box 1, Wednesbury, West Midlands, WS10 9XQ, UK.

Paul *RM 16*

P O Box 25, Ballymena, Northern Ireland.

Mark Turner *MDT 17*

Paynes Cottage, Popes Hill, Newnham, Glos, GL14 1LD, UK.

Peter Gomm *Flying Ace*

9 Farnell Close, Chichester, Sussex, PO19 4HB, UK.

Ken Biggs *Rubberlegs*

13 Stockton Road, South Park Reigate, Surrey, RH2 8JF

Tony *M I B 046*

P O Box 3, Portree, Isle of Skye, Scotland IV51 9EG.

Paul *VR 487*

7 School Lane, Offley, Herts. UK.

Chris Stimpson *Great Gonzo*

3 Beech Drive, Hothfield, Ashford, Kent, TN26 1DS UK.

from the UK.

Returning a little nearer to England, a letter from **Dave Armitage** on **Guernsey** asks for a mention for his **Whiskey Delta X-Ray DX Club**. Membership is £5 and the pack should include a stamp and some cards. Sorry, but that's all the info I have on that one. A cry for help now from **Tony Yewen (Rambler)** of **Tipton**. He asks for any help anyone can give about the **Dutch Trucking QSL Club** of **Hiambacht, Holland**. He sent £8 plus 10 cards off this time LAST YEAR and he has not yet received any reply. Also letters to the club have not replied to and Tony says if anyone can shed any light on this matter will you please write direct to him at P.O. Box 1, **Wednesbury, West Midlands, WS10 9XQ**. Thanks.

Some more names here, **Paul (RM 16)** of **Northern Ireland**, **Mark Turner (MDT 17)** of **Glos.**, **Peter (Flying Ace)** of **Sussex**, **Ken (Rubberlegs) Biggs** of **Surrey**, **Tony (MIB 046)** of **Portree** who wants to get 10,000 QSL cards, all received will get replies. Next, **Paul (VR 487)** of **Herts** and finally, as I'm rapidly running out of room, **Chris (The Great Gonzo) Stimpson** of **Ashford**.

There is a family business in **Queenborough, Kent** of rubber stamp makers, **C D Jones**. The prices Chris charges appear to be the lowest in England at the moment and his turn-around time is very good indeed. For full details drop him a S.A.S.E. and a note saying where you spotted this information and he will be happy to

send you prices etc. As a guideline, he can supply a personal design single stamp, up to 4 square inches, for £9 post paid! If you and a couple of friends want one each, even of different designs, then there is a discount! Or if you joined a club and the stamp was an unmounted lump of rubber, then **Chris** will also supply you with a base and handle to keep your fingers out of the ink pads! He also hopes to have a supply of 'stock' stamps anytime now. The price of these is expected to be somewhere around the quid mark. Before I close this time, a quick run through of some of the UK clubs that I promised a mention to. The **Outer Hebrides DX-QSL Club** now offers membership for an A4 size S.A.S.E. with 27p worth of stamps and 5 personal QSL cards. The **Sniper DX & QSL Club of Essex** costs 10 QSL crds and a 9" x 11" S.A.S.E (17p min) and now has two different club rubber stamps available at £3 each. The **Dayglo International QSL Club of Northern Ireland** asks for 3 QSL cards, a S.A.S.E. & a local view card. The newly launched **Galaxy Club of Brighouse** gives a bumper bundle and all for £4 plus 5-10 personal QSL cards and they **MUST** be cards with your return address on each!

And finally, the club poll time once again. The overseas top club is the

Zodiac QSL Club of Spain. To join this one, send £2 with 5 personal signed and dated QSL cards. You receive your Zodiac number, ID card, certificate, 5 Club QSL cards, exchange cards and invites etc. Allow a little while for delivery of your package, as **Lluis (Zodiac 001)** is working at present in **Tenerife**. The top three UK clubs for this time are, with last months figures in brackets; third, the **Romeo Delta X-Ray of Scotland (-)**, second, the **Cutty Sark of London (2)** and top for this month... the **Zulu Whiskey ZInt' of Brighouse (2)**. Okay, that's it except to say, keep your votes coming in. If you want to vote, then I want five names from you as it's your votes that count. Three QSL clubs, one overseas, and one club that you would not recommend to anyone! As usual, the **Dragonriders** to be exempt from nominations so no one accuses me of cheating! If you want a mention, then drop me a line c/o the **DR Club** address, or if you have any moans, praises, comments etc, then send them along and I'll see what I can do. Any clubs wanting a mention, then drop me a line and see what happens. If you want a reply to anything, then please do enclose either return postage or a S.A.S.E., it does help.

If any 'older' **Dragonrider** would like an ID card which is now available, then a small S.A.S.E. with your full name and address, **DR** number, handle and, if remembered, the approx date of joining will fetch you your card. So, until next month, take care, 'cos remember, we **CARE!**



QSL Club Addresses

Ball-Lightning	(UK Rep) Dave Sheppard, 6 Terrell Gardens, Redfield, Bristol, BS5 9NY. P O Box 2923, D-6750 Kaiserslautern, West Germany.	The Sniper DX & QSL	37 Bradford St, Braintree, Essex, CM7 6AS, UK.
Berliner Bear AM/FM	Brickyard Cott, Main St, Ticknall, Derbyshire, DE7 1JF UK.	Tripe City Breakers	182 Victoria Road, Padham, Burnley, Lancs. BB12 8TA, UK.
Britannia QSL Club	47 Gurdon Road, Charlton, London, SE7 7RP. UK	Viking Radio	P O Box 31, Lerwick, Shetland, Scotland.
Cutty Sark QSL Club	13, Syenite Place, Rostrevor, Co. Down, BT34 3EP, Northern Ireland.	Warrior International	P O Box 18, Reading, Berks, RF14 LA, UK.
Dayglo Int' QSL Club	P O Box 14, Brighouse, West Yorkshire, HD6 2SE, UK	Whiskey Delta X-Ray	c/o 2 Route Isabelle, St Peter Port, Guernsey, Channel Islands.
Galaxy Int (UK)	P O Box 2, Ebbw Vale, South Wales, NP3 5YN, UK	Whiskey Hotel	P O Box 228, London, NW2 2LE, UK.
Grey Moors QSL & DX	P O Box 14, Stornoway, Isle of Lewis, Scotland.	Zodiac QSL Club	P O Box 168, Sant Feliu de Guixols (Gerona), Spain.
Heather Islands DX	P O Box 23, Lewes, Sussex, UK.	Zulu Whiskey Int'	P O Box 14, Brighouse, West Yorkshire, HD6 2SE, UK.
Lewes QSL Club	P O Box 11, Stornoway, Isle of Lewis, Scotland.	Dragonrider QSL Club	3 Tarn Villas, Cowpasture Rd, ILKLEY, West Yorkshire, LS29 8RH, UK.
Outer Hebrides DX-QSL	Pommernweg 1, D-5140 Erkelenz 5, West Germany.		
Rodeo QSL Club	P O Box 1, Liverpool, L22 4RT, UK.		
Sefton Breakers Club			

When writing to ANY QSL Club, please always enclose return postage to assist with their reply to you, it really does help. Thanks.

C D Jones (Rubber Stamps) St Ivy, North -rd, Queenborough, Kent, ME11 5ET, UK.



After lengthy waits and some false starts, it seems as if the next few months will see the introduction of some more 934MHz sets. Sue Sharp discovers how likely this is.

TOO LITTLE

As the introduction says, it seems as if there will be a greater selection of 934MHz rigs on the market soon but it is a brave writer that will say that with any degree of certainty — bitter experience having shown that the CB market never behaves in the way expected of it!

It's easy to forget that UHF CB was introduced at the same time as the legal 27MHz. system. At the time, attention was focused on 27MHz. and it was for this frequency that companies were falling over each other to make and sell equipment. None of the large electronics or communications companies showed the least interest in developing the UHF frequency, leaving one small British company to persevere in a field that required extensive research and development.

Reftec transceivers have now been available for two years, with a newly introduced base station. In an attempt to control the sale of the sets and thereby hopefully ensuring the backup that the dealer can offer, Reftec have had limited sales outlets and some delays in supplying equipment.

There have been criticisms that the sets are too expensive but this is at least partly justified, in my view, by the costs that Reftec have had to bear whilst developing the equipment.

The other set available is the Grandstand transverter, the LA 83 which converts a 27MHz. set to 934MHz. frequencies. A clever piece of engineering, Grandstand have nevertheless not found it plain sailing.

Unavailable for some months after the anticipated launch date, the LA 83 will only work with another Grandstand, the Bluebird, although the original intention was that it would

be suitable for most if not all 27MHz. rigs.

Anxious to avoid the 'CB' label, Grandstand refer to the leisure communications band and this seems to be a growing trend. Grandstand have also announced the LA 84 transverter to replace the LA 83.

Future plans

Having established that there are currently two sets available, what can we look forward to in the near future?

Telecomms

Down in Portsmouth, Mike Deveraux and technical consultant Jim Finch have been working on a range of 934MHz. accessories for some time. These are now available from the Telecomms shop and other retailers, but, almost as an afterthought, news followed on the 934MHz. rig that should be available at the beginning of October.

In fact, this was not an afterthought at all, but the result of extended and very quiet negotiations with a leading Japanese manufacturer which has taken many months to complete. Mike was wary of releasing details too soon in case the negotiations were stalemated and he was anxious to avoid the similar situation that had arisen with other companies planning on introducing UHF transceivers.

But it seems that the 'Telecomms' transceiver, although it has yet to be properly christened, will be with us soon. As the photograph shows, it is a sophisticated set that incorporates several new features for 934. It will cost about £300.

Channel changing is via two buttons which quickly take the frequency up or down and there are both search and memory functions for storing channels and for locating busy and clear channels. The signal and RF power displays are LEDs on a rising scale.

The photo shows the set in its prototype form and it is likely that there may be some minor alterations yet to be made. Telecomms are hoping to include a socket for the connection of a large external signal meter.

For readers who are not yet convinced that this set will actually appear on the market, I have seen and used the one of the prototype rigs at Telecomms in Portsmouth!

E.M.S. Communications

In Wantage, Derek Witts is taking another approach to the same goal. The E.M.S. Mercury is a British

The 934 MHz. Prototype from Telecomms. Expected retail price about £300.00



LE TOO LATE?

designed and built 27MHz. rig, with the Poseidon base station also available. Anyone who has seen or used a Mercury will know that it is, as a breaker once described it, 'a real belt and braces job.' It is solidly engineered and manufactured to a very high standard.

E.M.S. is planning to produce a 934MHz. rig to the same standard and they have been working on the design for some time. All the design and manufacture has been done, or will be done in this country, using as many British supply firms as possible — and in some case using companies that supply 27MHz. components for the Mercury too.

The biggest problem that E.M.S. have been facing is locating and obtaining particularly specialised components, and other companies hoping to do UHF rigs have come up against the same barrier. "Some companies have been quoting several months before they can deliver some items — one company actually said they couldn't deliver until 1985!" said Derek. "We can get hold of one or two or even several of some items, but when we want to order thousands — then it's a problem."

The supply situation has resulted in the E.M.S. prototypes being delayed by some weeks, which has in turn delayed production.

Initial plans are for a mobile 934 set — a fairly standard set with basic controls and facilities. This should be closely followed by a more sophisticated version that will be developed on the same way as the Mercury — scanning facilities, sel. call and a base station. Prices are expected to start at the £300 mark. All sets will be 20 channel but will convert easily to 40.

This price reflects the E.M.S. philosophy — they don't put products on the market until they are satisfied

that it is right, and they don't aim for the cheap end of the market. Many of the buyers of 27MHz. E.M.S. equipment are semi-professional users who are not always motivated in their choice by cost, and E.M.S. intend to stay in this area of communications.

Magpie.

The company that have designed and manufacture the Magpie Autoscan 5000 have also been developing a circuit board that will easily convert the Autoscan into a dual rig with both 27MHz. and 934MHz. Ray Friedlander of Magpie is convinced that this is technically feasible without loss of performance to either part and would anticipate that the modification could be done to rigs already in use or the customer could buy a set that already had both.

However the company has been tied up with the industrial consultancy service that they offer and have to admit that they "are not as far forward as we had hoped. We think it is unlikely that anything will be available this year".

A star from the East?

As I foretold in an editorial some months ago, the success that Japan and the Far East has experienced with the Japanese personal radio system is causing them to search for other markets. The increasing attention being given to UHF as an almost universal communications service means that their initial impression of the UK as too small a market is being revised.

Although I have been asked not to reveal names, I can say that the UK organisation for a very large Japanese consumer electronics company and a British agent for a Far Eastern communications company have both been in touch with the magazine,

asking for an assessment of the British UHF CB market and an estimate of the sales potential. Although these are only preliminary enquiries, it indicates the research now being put into the future of the UHF market.

Where are they now?

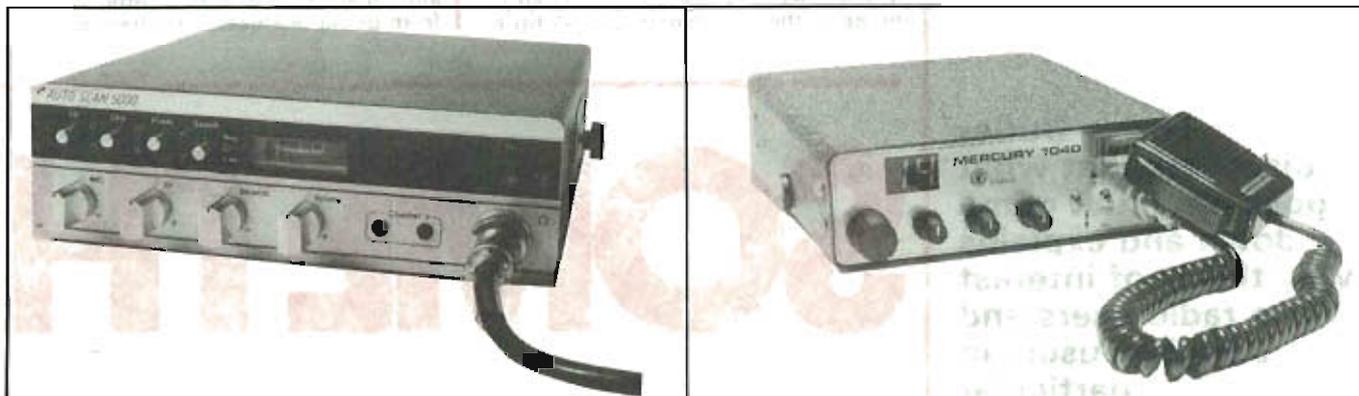
After the great interest in both the Warlock and the Uniden, they have both disappeared from view. It has been likely for some time that we would not see the Warlock in the form we had originally expected, but the high hopes for the Uniden range, which was to have included a dedicated UHF set, a dual set and a base station, seem to have floundered too, or at least for the moment. It had been intended that at least one of these sets would have been available at the beginning of summer and unless very early press dates have made a fool of me and sets are selling now, we have got to autumn without a sign of one on the shelves.

No sign either of the dedicated 934MHz. CB that Grandstand were hoping to have available after the transverter.

It was always my great hope that British industry and companies would have the foresight to develop UHF CB and not leave it up to the land of the rising sun. To an extent, my hopes have been fulfilled, but only three smaller companies, two with previous experience in CB, have taken up the challenge. Other companies are, perhaps wisely for them, going to the Far East. This may well pay dividends, as the equipment facilities indicate a great sophistication at a better price, but will present greater problems with spares and servicing.

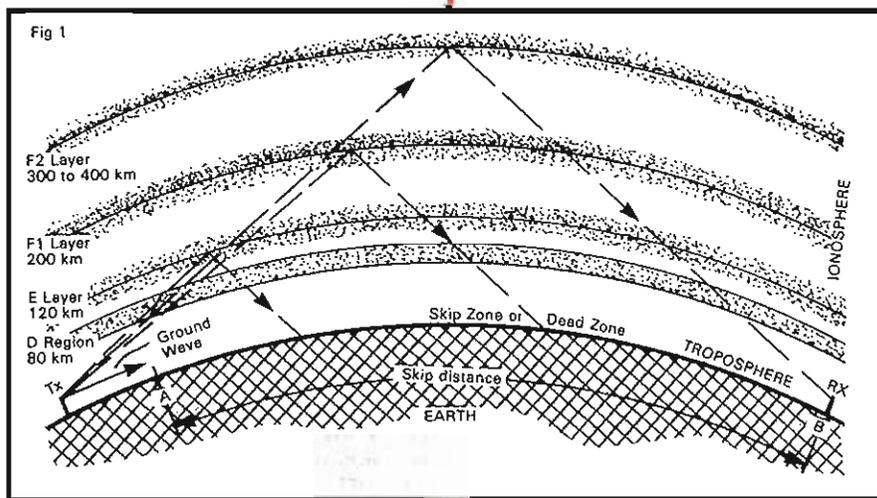
Three years later, it is fruitless to talk about what might have been, but what a lost opportunity.

Will we see equipment from Magpie and E.M.S? Both companies are currently researching this frequency.



No single article can hope to explain all that is involved with propagation — because there are so many unknown variables involved, as well as many interactions, which make radio wave propagation such a fascinating subject in its own right. It is only lightly discussed here, with regard to particular frequencies — around 900MHz, and their paths from a radio transmitter to a receiving antenna. This progression is normally dependent upon actions and interactions directly related to the Sun, although at frequencies around 900MHz, solar activity plays a lesser role than other factors which are investigated here.

Before looking at a specific frequency it is useful to look briefly at the earth's atmosphere, since most of the direct influences on signal paths have their origins here. Trying to identify various portions of the atmosphere is a confusing concept. There are no obvious boundaries to work to, although the most favoured breakdown is shown in fig.1., and this now widely accepted.



The area with which we are concerned is the troposphere — a region extending to about 10km above the ground, where the average temperature tends to fall, relative to altitude. The effect on radio waves in this region is dependent upon weather conditions because it is in the weather-producing lower part of the atmosphere. Signals propagated by 'tropo', as it is called, can greatly increase the otherwise line-of-sight

contacts normally available at UHF frequencies.

Closely studying the weather charts and satellite pictures, now broadcast, provides an invaluable insight in to calculating those conditions likely to produce 'openings' due to troppo effects. However, only two weather systems will provide true dx openings. A sluggish 'high' pressure area associated with late Summer, and wave cyclones common in spring-time. Whilst local enhancements to propagation are made by warm and cold fronts, they do not produce real dx conditions.

Unlike ionospheric 'skip' where signals are reflected and refracted by ionized air some one to two hundred and fifty miles high, tropospheric activity can be attributed to a layer of warm and normally very dry air, not more than a mile high. Under normal conditions, the temperature and moisture content of this lower atmosphere decreases with altitude. In a temperature inversion, causing 'lifty' conditions, the temperature will rise suddenly whilst moisture content is decreasing.

These inversions prove useful to propagation and occur around fifteen hundred feet, where radio waves are 'bent' or refracted toward the earth, although the degree of inversion must be sufficient to refract signals all the way back. Local enhancements exist where there is not a sufficient refraction and often cover a wide area by consequence, since the signals are not refracted by a single hop.

Trying to predict such occurrences is a difficult task. The rate at which an inversion can refract waves determines things to a large extent. Conditions are affected by changes in temperature, pressure and moisture. However, since atmospheric pressure always decreases with altitude, only variations in temperature and, or, moisture with which concern us.

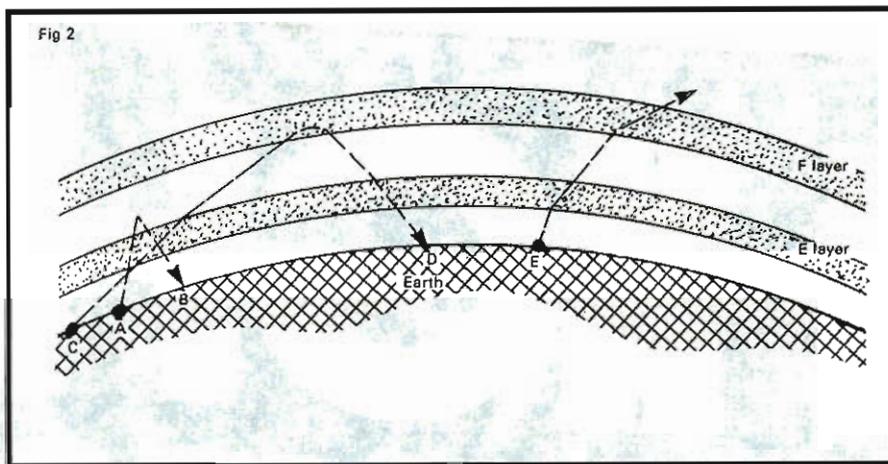
Cool, moist dry air will yield high values of the refractive measuring index; whilst warm, dry areas will produce low levels — refraction being greatest when the index decreases sharply with altitude.

Normally temperature and moisture decrease steadily with altitude, although changes will cause the index to decrease only marginally with height — this small change is significant in preventing radio waves from going uselessly into free-space.

Trevor Butler discovers that what goes up, must come down and explains why this is of interest to radio users and 934MHz users in particular

SOMETHING

Fig 2



A variation to this phenomena is known as super refraction and exists when temperature rises and moisture content of the atmosphere decreases rapidly, thus resulting in good conditions for the radio enthusiast. A point to remember, though, is that different radio frequencies are not all refracted to the same degree, (Fig.2) and that whilst an inversion is giving super-refractions to higher frequencies, those at a relatively lower frequency are not subject to super-refraction.

As the inversions grow in depth and strength, over (often) relatively short space of time, tropospheric appearance will probably be apparent on higher frequencies first. A good guide is to watch band V UHF television transmissions for co-channel interference and the reception of signals not normally received.

The effects of 'ducting' must also be considered — a huge super-refraction acting as a giant waveguide where only signals above a certain frequency are trapped under the inversion layer and unable to escape to space because they have been refracted back to earth. These signals in the ducting area are sent over long distances whilst reaching high signal strengths and, unlike 'skip', all stations within the ducted area will normally be able to hear each other.

What causes inversions, though? Well, three different weather conditions need to be considered with regards to inversion over land. Perhaps the most common type is the rapid cooling of the earth after sunset, although this is rarely useful in providing conditions for dx operation. The second set of conditions occurs

mainly within large high-pressure systems and are favourite to provide strong and prolonged 'openings'.

Inversions attribute to the movement of air masses are created in various weather systems, among them both wave cyclones, and warm and cold fronts. These fronts do not, produce true dx conditions, as can be found within wave cyclone systems. The most common type of temperature inversion occurs over dry land during clear Summer evenings — a product of progressive night-time cooling.

The surface air is re-warmed as the sun heats the ground soon after sunrise. The inversion is revealed and any dew evaporates. Although more common in summer, radiation inversion can occur at all times of the year, generally being weak and rarely bringing any good dx because the moisture content does not drop off fast enough and the increase in temperature is not steep enough. The vast majority of a strong and prolonged propagation 'openings' appear in late Summer with high-pressure systems. An atmospheric high is a large mass of air whose pressure is higher than the surrounding air. Winds then force air in the system outwards. An indication of this is a generally clear outlook with light winds.

The air within a high-pressure area is stable because it is sinking. The subsidence of air is a most important feature of a high because subsidence creates strong inversions. Indeed subsidence-inversions become stronger and more stable in the lower atmosphere, at night. So, during the hours of sunlight subsidence is

countered by a strong rising of air caused by the heating of the earth's surface.

Low-level clouds of the distinctive cumulus, 'puffy-type', are generally produced by the day-time rising air. As the sun sets, the ground will lose heat and the air stops rising. Subsidence takes over and strengthens the inversion considerably, forcing it downwards even further. The clouds often evaporate quickly in the dry descending air of late afternoon. After sunset clear skies and calm air may exist under high-pressure conditions and here radiation inversions are often found. By the following morning, radiation and subsidence may well be found to exist simultaneously.

A wave cyclone is a completely different weather system which can sometimes lead to good UHF conditions — although they tend to be fairly short-lived. Whilst being variable, wave cyclones can bring severe weather conditions such as thunderstorms.

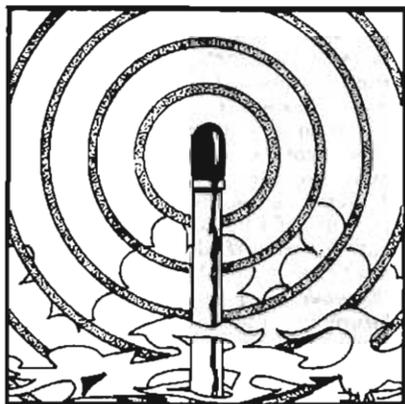
Warm fronts, indicated on weather system charts by lines with rounded 'bumps' on the forward side, are regions where warm air meets cold air, which is forced to rise above it, precipitating on the way. Cold fronts, on the other hand, indicated by triangular 'spikes' on the forward side of lines, are regions where cold air is under-cutting warm, and the front itself is quite often accompanied by towering clouds and heavy or even thundery rain. Both these fronts are common weather features creating conditions of inversion, yet tend to be limited in area and not prone to lasting for substantial periods. Fronts, therefore, rarely bring dx conditions, rather enhanced local conditions. Having said this, it has been known for exceptional conditions to be produced by long and slow-moving warm fronts.

Cold fronts may also improve conditions locally for limited periods but rarely provide extended openings in propagation. Any enhancement will take place behind the cold front as the atmosphere calms down.

There are, then, many contributory and differing factors which need to be considered to try and forecast an 'opening' due to tropospheric propagation, although perhaps an easier way of judging the conditions is to listen and give several calls as there may well be someone else doing the same thing, hopefully many miles away.

ING IN THE AIR

Antenna Review



Appropriately for Olympic year, Brian Wright looks at a Javelin

HIGH STAKES

One disadvantage of radio communications on the HF bands (e.g. 27MHz), is the size of antenna required for effective operation, compared to that required for the VHF or UHF bands. This can be a problem when mobile or handheld and these antennas usually have to be shortened by the use of a loading coil to make them practical to use, which results, in most cases, with a loss in performance. Whilst breakers have to accept this when mobile or portable, if only for the sake of being legal, it is quite clear from the amount of large illegal antennas that are around that many do not accept this for homebase. However, a style of homebase antenna that has proved to be very popular because of its high performance while remaining legal is the centre or base loaded type with three large downward inclined groundplanes. Again the problem with these antennas is the large amount of space required. There have been attempts to either shorten the groundplanes or reduce the length by fitting loading coils in the 'legs'. Both methods usually result in a severe drop in performance. This month however we have tested an antenna that has sought to overcome these problems by using very large, more efficient loading coils in the groundplanes and the same large coil for centre loading the radiator. We were therefore very keen to test this antenna which claimed to have a

3.5dB gain over a normal quarterwave, which is the Javelin High Gain from Aerial Supplies (Redditch) Ltd.

The first thing that surprised us on receiving the Javelin was the short length of the box and the weight, which seemed high for the usual bundle of aluminium tubes. When we opened the box, all was revealed, as the tubes were all fairly short and the four coils all big and heavy.

The radiating element is supplied with the lower tube assembled to the usual solid aluminium mounting boss, with a thin insulating washer between the tube and boss. The SO 239 socket on the underside is of the split central connection type which grips the plug pin very well, ensuring a good connection. The lower tube has a solid fibreglass rod fitted down the centre of it to give the tube added strength and rigidity. The 245mm long, 26mm diameter coil assembly simply slides onto the lower tube and is secured by tightening a grub screw with the Allen key provided. The top tube is then slid into the top of the coil assembly and secured in the same manner. It is easy to see now that, without the fibreglass rod in the lower tube, the whole assembly might sway severely and bend in a strong wind, having such a large heavy coil half way up. The whole assembly is approximately 1.64 metres long making good use of the regulation length.

The groundplane elements are assembled in the same way as the radiator; the central coil assemblies being identical to that of the radiator.



ANTENNA REVIEW DATA PANEL

SPECIFICATIONS

Model **JAVELIN 'HIGH GAIN'**
CENTRE LOADED BASE STATION
Type **WITH LOADED G/PLANES**
Length **1.64 metre whip**
Frequency Range **27MHz**
Max Power Handling **100 WATTS**
Impedance **50ohm**
Cable Supplied **NONE**
Mounting Details **1 1/4 inch MAST**
Supplier **AERIAL SUPPLIES (REDDITCH) LTD**
Typical Price **£27.87 inc. vat + £1.88 P & P**

The main difference is that a groundplane support moulding must be fitted to the upper half before assembly. The inner or upper rod of the groundplanes has no rod inside of the tube as they are supported by the elaborate supports described below. The thread assemblies on each tube, for screwing into the central boss, are fitted very securely into the tubes and are in fact the most secure that we have encountered. The length of the 'legs' is approximately the same as the radiator.

The groundplane support assembly on the Javelin is very rigid, showing that the manufacturers have designed in extra strength to allow for the added weight of the large loading coils. The supports consist of three tubes joined by a moulding fitted to each 'leg' so as to form a triangle. Another moulding on each of the rods forming the triangle connects three shorter tubes or struts to the large plastic moulding that slides over the mounting pole. This support assembly not only ensures that the groundplanes don't droop but also prevents them from swaying together, thereby keeping them equally spaced.

The Javelin is mounted in the usual manner for this style of antenna. The coax complete with PL259 plug is fed up the centre of the mast and connected to the underside of the central boss. The mast is then passed through the groundplane support moulding and into a large recess in the mounting boss, where it is secured by three screws (not just one as is often the case). The Javelin can now be erected permanently as this antenna is a proper homebase antenna that is pretuned. When erected our test sample had an SWR of between 1.1:1 and 1.3:1 across the whole 40 channels.

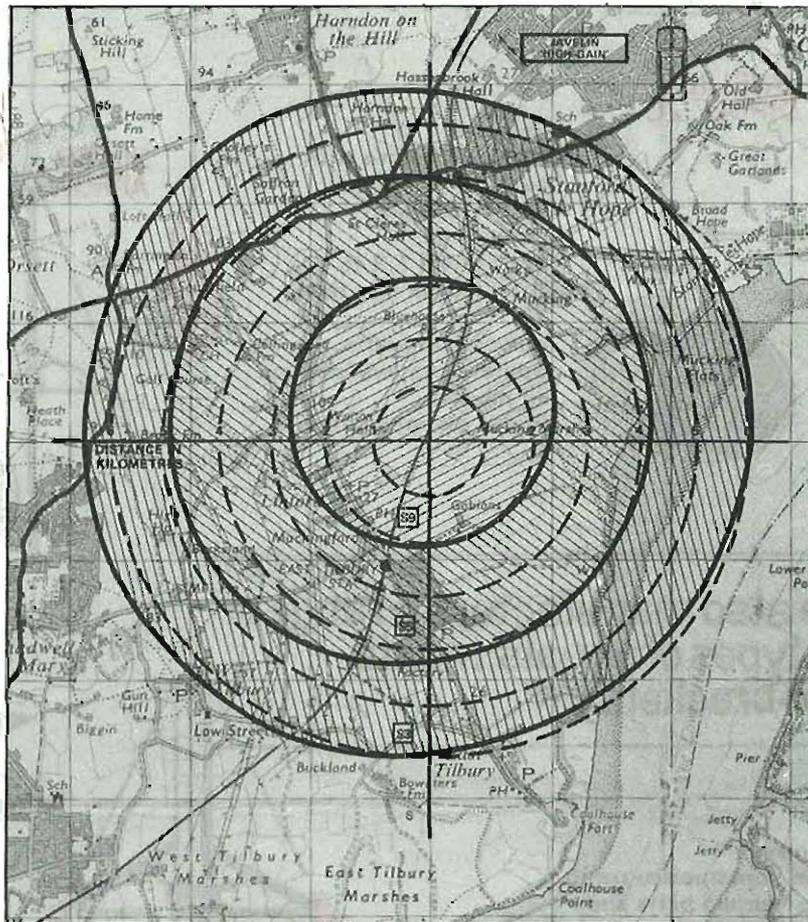
The two page instruction sheet is quite adequate with plenty of information, diagrams and step by step instructions.

On test the Javelin transmitted better than some base loaded types with full length groundplanes that we have tested, but not quite so well as the top antennas of this type. Contact was maintained throughout our test route and reception with the Javelin appeared to be comparable with the top antennas.

We consider the Javelin to be a very well constructed, above average and useful performance antenna which should have a long life. The designers have put a great deal of thought into this antenna which not only makes it durable but easy to assemble and erect. The Javelin could be especially useful to those breakers a little short of space to erect the large types, but looks no less impressive with its four large coils.

Our thanks to Aerial Supplies (Redditch) Ltd. for supplying the test sample.

A similar antenna for performance would be the Silver Arrow a base loaded antenna with full length groundplanes, also from Aerial Supplies.



REVIEW VERDICT

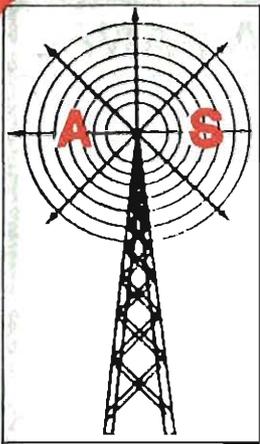
Performance **XXXX**
SWR Adjustment **XXXXX**
Construction **XXXX**

Installation **XXXX**
Instructions **XXXX**
Value **XXXX**

We rate our samples on a scale of one to five. Five crosses is the highest rating, three and four stars are average to good and one and two crosses mean it's not doing so well.

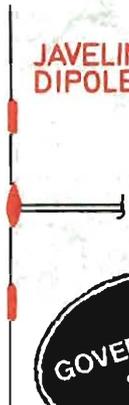
The Tests

We have used our standard test procedure to assess the efficiency of this antenna. Just to bring new readers up to date this involves two tests; one static and one mobile. Our test sample is fitted to a stationary mobile and a second mobile follows a pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standard rig and antenna is used in all the tests. With the results obtained we are able to draw up the radiation pattern shown here. This is simplified to make the results more easily understood. The antenna is also subjected to a series of 'lab' tests to assess their durability, quality and construction, etc and finally we hand it over to a panel of Cbers for comment.



THE NEW JAVELIN RANGE

**JAVELIN
DIPOLE 2C**



**GOVERNMENT
SPEC**

Features:
 Reduced length with better performance.
 Pole & bracket mountings.
 Pre SWR'd 1.3 to 1.
 Total length less than 11'
 Power 100 watts.
 Spare parts available on all models.
 Prices on application.



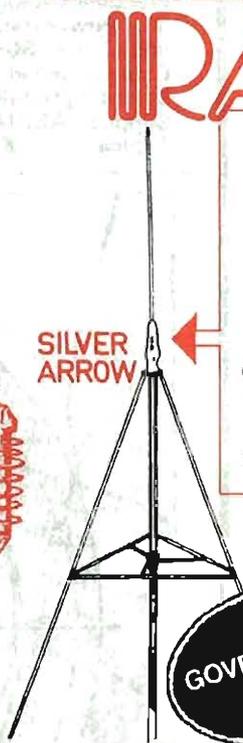
**SILVER
ARROW
MARK II
LOADED
COIL IN
PLASTIC
MOULD**

Pre-tuned home base legal antenna. Pre-tuned radiator for FM. SWR better than 1.3:1. Power handling 500W. Requires 1/4" dia. pole for mounting. Additional strengtheners to ground plane radiate for improved stability in high winds. Mast held not by one but three locking screws. Best and strongest legal base station aerial on the market today.

NEW

NEW
 Silver Arrow Mark II. The best legal aerial on the market today. With extra bracings for strength on the ground planes.

**SILVER
ARROW**

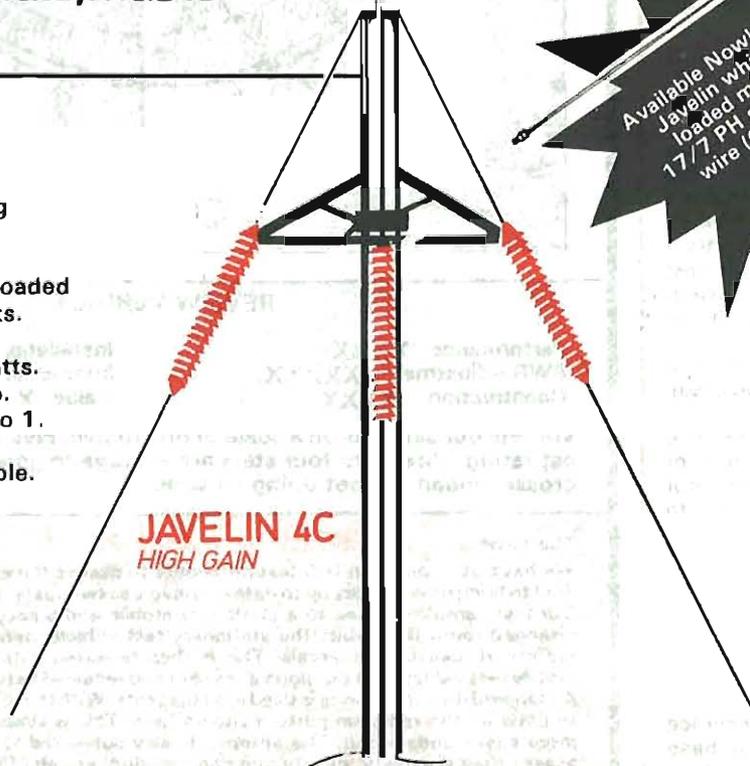


**GOVERNMENT
SPEC**

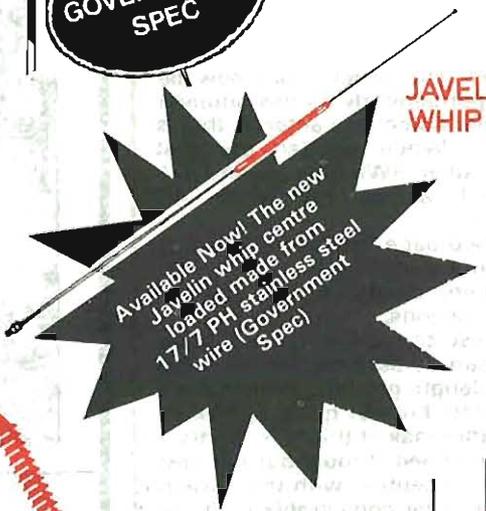
We also manufacture a range of all types of aerials, masts and brackets.

Features:
 Rigid construction using finest turned parts and welded tube.
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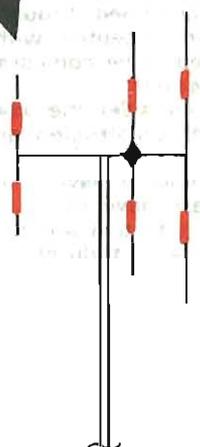


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Mack Chat

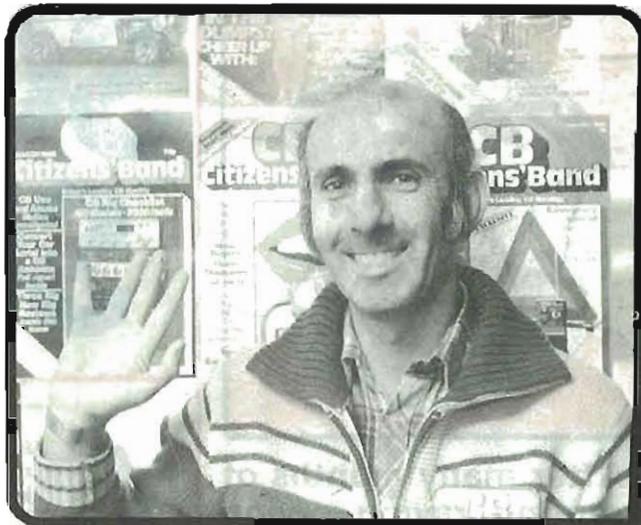
Mack's in a thoughtful mood as he looks at CB's beginnings and future.

In the beginning there was AM CB radio. During the campaign for legal CB the first promise was for a service in the 900MHz band. I wonder what would have happened if we had not got 27 but only 934 MHz? Would more manufacturer's have entered into the 934 market? Would it have been profitable for them? Would the potential Cbers have forked out the large sums of cash that without doubt it would have cost to purchase the equipment? If we try to visualise the situation where the 934 rigs might have been difficult and expensive to obtain, then the illegal AM CB would have flourished with maybe as many people breaking the law as now operate legally. We all know now that DTI staff only pursue offenders through complaints. Although the illegal breakers were and still are called AMers many realised the benefit of using FM on the illegal band and many of the later illegal rigs that found their way into this country incorporated FM mode. Fortunately the powers-that-be aren't all that thick and saw the problems that would arise. Not wishing to miss out on the taxes they could collect from the importation and sale of rigs they gave us the 27.

Although for ages they repeatedly said that this country would never get 27MHz, I believe that I can claim to be maybe the first person to realise that we were going to get the 27MHz frequency. It was all to do with words. I used to study rather than just read the Hansards reports that were issued, and way back in November 1980 a statement was published about the number of illegal breakers (50,000) at that time, and I noted just one sentence which was, 'At present the use of 27MHz is illegal, where ever one is throughout the country, one must not use it.' Did you spot the clue? Two words 'at present' and I was right.

Recently I received the latest DTI CB information sheets as they call them and I have noticed some interesting points. Sheet No 3 is all about frequencies. The CEPT recommendations are for a 40 channel service operating between 26.96 and 27.40MHz, 4 watts FM. Our government has stated its intentions to adopt this recommendation 'but it will take some time to clear the channels concerned' says the statement. What this means is that the 40 FM that we have at present will in time become illegal, but for a period of time we shall be allowed to operate the two systems.

I have never really bothered much about mobile antennas. For me it's if they work and suit the mobile then it's good enough. I haven't had the time to conduct any real tests, but here is a report of somebody who did and their results. First did you know that in Israel the CB system is 27MHz FCC (AM) but their taxi service have chosen our British 27 FM system using the Radiomobile 202 rigs. A representative from their taxi trade visited this country and he returned to Israel with a selection of British, American, and Far East produced antennas and don't you know they chose and ordered the Les Wallen Modulator MDX long coil antennas to use on their taxis.



Reading the other month in this mag about Keith Townsend and his windups reminded me of some others that used to haunt the channels. You still hear the breaker that calls 'Bloggo, you on the 19' for, it seems, ten times a minute and carries on for ages. What a pain. After a while one goes back to the breaker saying 'Who's calling for Bloggo? You got him I' 'No, you're not the Bloggol' The first breaker would reply. 'Yes I am and have been for years! If there's another Bloggo he had better change his handle'. Sometimes another breaker would come on and join the wind-up as another Bloggo. A different variation of this wind-up is when a breaker comes on saying 'Bloggo, do you copy the Vampire?' Back you go saying 'Come back the breaker for Vampire' and off you go again with the breakers arguing who is the real or first Vampire on the channels. Yet another wind-up is when a station calls 'QSK on the side' Knowing who the QSK is you ask who's the station with a carrier and no modulation. Well the QSK continues to attempt to get in and might even get accused by the other breakers of purposely putting up a blank carrier. Even when mobile you can still play wind-ups. When, say, a breaker calls 'Eyeball the blue Cortina', or what ever other mobiles they might spot, if no response is heard you could go back as the eyeballed mobile. If, after a short while, the eyeballer is following the mobile that he has eyeballed he might realise that the driver or passenger is not on the mike you can then reveal that you are in a mobile of the same make somewhere in front or behind the eyeballer. One of the longest wind-ups that I know of was when, after a party eyeball, one of the breakers got rather paralytic (drunk) and the antics that he was supposed to have got up to went on for weeks over the channels. Even to the extent that one lady breaker claimed that he was responsible for her alleged pregnancy.

There was this breaker that ratcheted away on his CB box, enjoying his hobby. One day he was confronted by an irate neighbour. 'Your CB is causing interference to my tele', accused the neighbour. Not being one to upset people, he told the neighbour that he would investigate the matter. Now the Cber operated strictly legal; he tried resetting his antenna but to no avail. The TVI continued and the Cber noticed that the neighbour's tele setup was a bit 10-1. Duff indoor antenna and such. So the Cber had to restrict his transmissions. Whilst this was all in progress our Cber's mum happened to mention this incident to yet another neighbour. The other neighbour's reply was 'he's a right one to moan. He hasn't even got a licence' When our Cber learnt of this he went back to his usual modulating and when the illegal TV watcher once more complained, our Cber told him that there was nothing he (the Cber) could do as he was strictly legal and emphasised that he had a licence and that he (the neighbour) should complain through the Post Office to the RRD and they would send somebody around to sort out the trouble.

Funny but our Cber never heard any more.



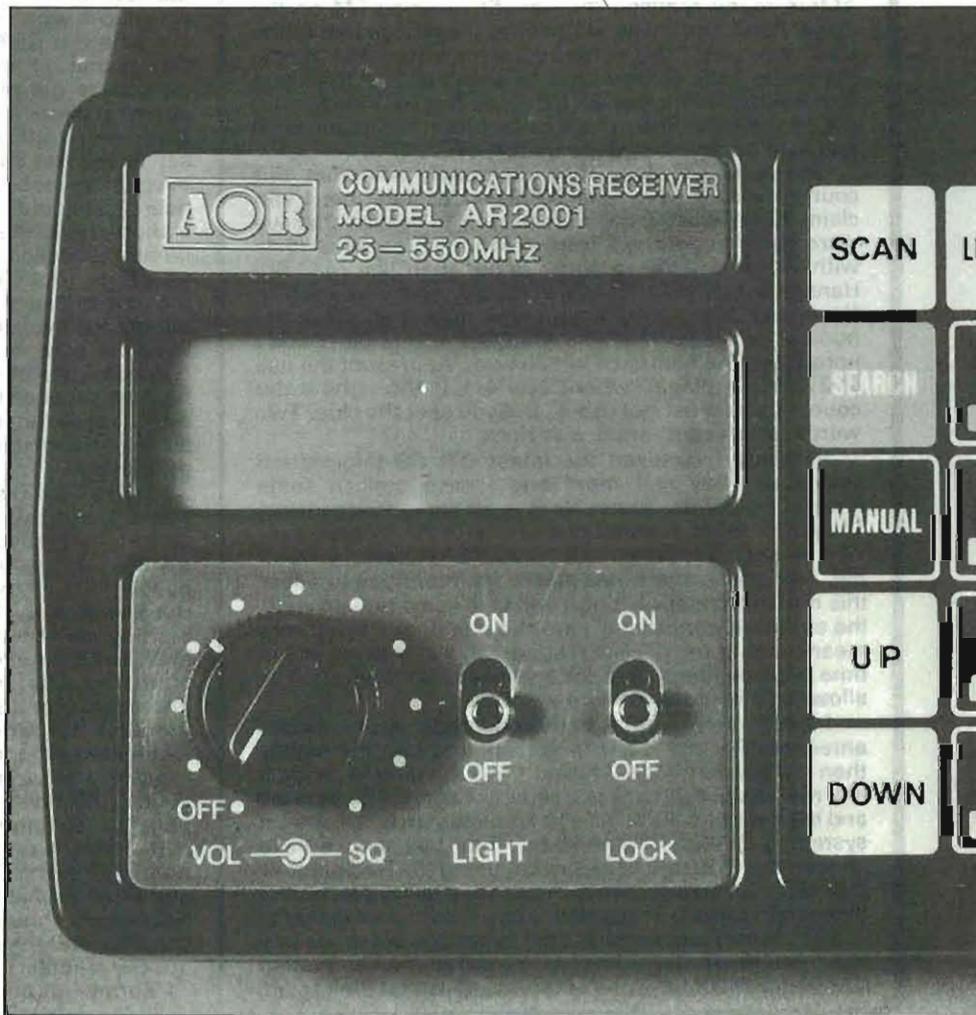
After many months of ranting, raving, crying and sulking, Andy R Giles has managed to persuade Lowe Electronics to loan him a scanner for review. Was the wait worthwhile? Read on for his findings.

SCANNER SUPREME

As regular readers of this magazine will already know, I am a scanner freak. It may not have a lot to do with CB, but it is fun and, as our postbag shows, an increasing number of CBer's are now ready to expand their horizons beyond 27MHz. Many readers have expressed an interest in general coverage communications receivers; these usually cover from 0.5 to 30MHz and give the listener access to the shortwave bands. This is certainly an interesting area to explore and in future issues we hope to describe more fully how to tune into foreign radio stations, amateur radio nets and some of the more exotic

things that can be heard. We may also review some of the radios that are currently available — there's even one that comes complete with a multi-function remote control that allows you to tune around the world from the comfort of your armchair!

Meanwhile, another subject that we have been receiving letters about is scanning, possibly because I have plugged it several times in the last few months. Unlike HF communications receivers, scanners will not let you listen to long distance signals. It is peculiarity of radio signals that, in general, the lower their frequency, the further they travel. Communications receivers pick up signals below 30MHz and these are the ones that



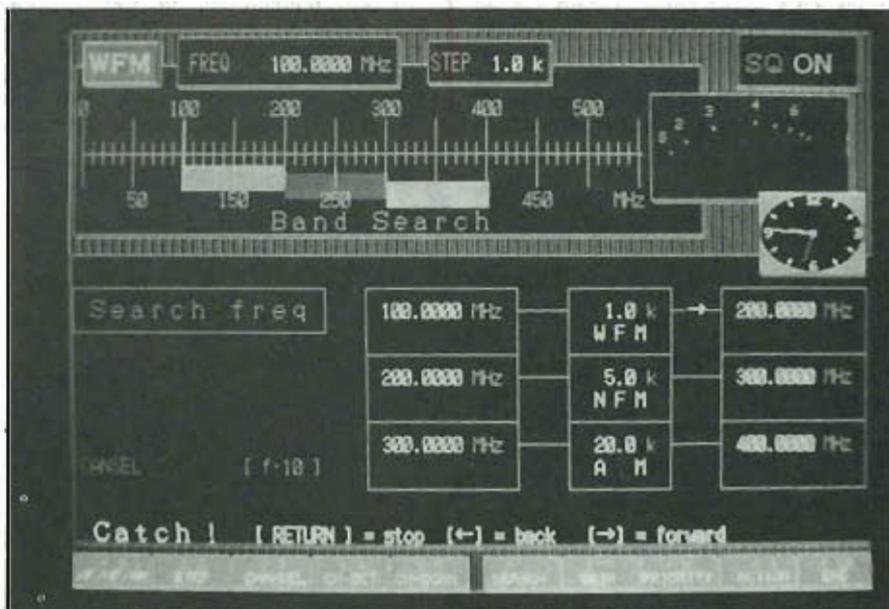
travel around the world. Scanners usually receive signals in the VHF and UHF bands (approximately 50 to 500MHz) and these transmissions do not often carry very far. This does not mean that there is less to hear on these bands but unfortunately most of the signals that can be heard are from sources such as the police, ambulances, fire brigades, minicabs, aircraft, boats, buses, radio telephones, security guards and so on and we are not allowed to listen to them. I have made this point before in previous articles but I must make it again because it is important.

Anyone who is considering buying a scanner should be fully aware of the legal position. In Britain we are governed by the various Wireless Telegraphy Acts and they make it quite clear that we are only allowed to listen to authorised broadcasting stations (BBC, IBA etc), radio amateurs and, with the appropriate licence, British citizen's band operators. We are not allowed to eavesdrop on any other transmissions, even if we keep their contents secret. The bit in the Act that says we are not to pass on any information that we may obtain from listening to these stations only applies to those of you who may have accidentally tuned into, say, the police while looking for Radio 1. This is quite easy to do in this country because a lot of the police channels are in the 88 -

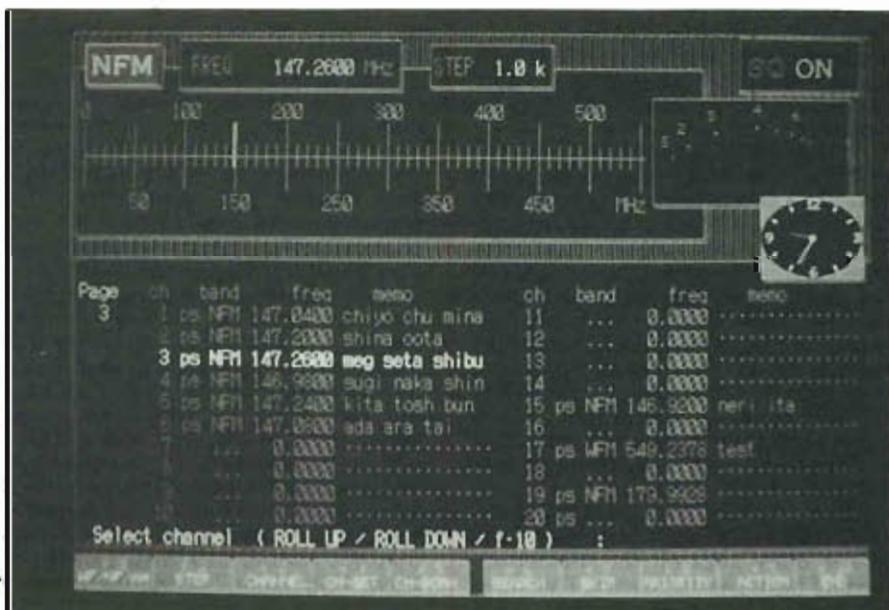
108MHz band. This is the band marked 'VHF' or 'FM' on most domestic radios and it has been internationally agreed that only broadcasting stations should use it. That's why the police will soon be moving to other frequencies, but until they do, it is still possible to overshoot when tuning around and accidentally receive their transmissions. Should such a thing happen, you are obliged to immediately retune and not tell anyone what you have heard. This may seem pretty strange, but it is the law!

Having said all that, scanners can still be a lot of fun. In our June issue I gave a brief rundown of the different

facilities that are available on most scanners. As you are all dedicated readers who wouldn't dream of missing a single issue of this magazine, I needn't go through all that again. Generally the better scanners have few differences between them but now there is one that stands out from the rest. The AR 2001 was recently introduced into this country by Lowe Electronics. Such has been its success that there is now a waiting list of people wanting to buy it and another list of journalists waiting for a loan of the review set. Why all the fuss over a scanner? The answer is very simple. Most scanners start their coverage somewhere between 25 and 60MHz and then go on up to approximately



The AR2001 screen display on a home computer. The basic program runs lots of sub-routines that handle scanning; memos and search facilities. This is from the prototype board — so some the display is in Japanese.



500MHz in separate bands. One typical good quality scanner lists its coverage as 60 - 89MHz, 108 - 138MHz, 140 - 179MHz and 380 - 519MHz. In other words, it will not cover 90 - 107MHz, 139MHz or 180 - 379MHz. The beauty of the AR 2001 is that it covers 25 to 550MHz continuously — there are no gaps! One of the advantages of this is that it will pick up signals in the broadcast band (88-108MHz). Also, because broadcasting stations use wideband FM, this radio has provisions for receiving in this mode as well as narrow band FM and AM. It may seem a bit of a waste using a receiver like this to listen to Radio 1, but I think that it just adds to its versatility. I know of one enthusiast who installed one of these sets in his car and then loaded all of the memories with broadcast band stations just before he went on holiday to an Eastern Bloc country with his car. He had no trouble at all with the border guards because they

you read the instructions first! The single function keys are almost self-explanatory. The SCAN button makes the set scan its memories, the LOCKOUT button locks out any number of individual channels so that they are not checked when the set is scanning. The PRIORITY button instructs the set to check channel in every couple of seconds and immediately switch to that channel if a signal is present. The CLOCK button shows the time on the led display, without affecting the signal or channel that is being received. The SEARCH button starts the set searching between user programmable limits. The MANUAL button cancels all other instructions and allows the channels to be checked individually. One push of the button advances the channels one at a time but pressing MANUAL and then a channel number lets you go directly to that channel. The UP and DOWN buttons tell the set the direction in which to search. This can

2001 scans the memory channels and the decimal point button also activates the DELAY facility that causes the set to pause for approximately 2.5 seconds after the signal has 'disappeared, just in case the other user is a little slow in replying.

The led display is very easy to read and contains lots of information. It not only shows the frequency, it also shows which of the various features have been activated such as LOCKOUT, DELAY, SCAN and so on.

In the bottom left-hand corner of the front panel there are two concentric rotary controls. The outer one is the SQUELCH and the inner is the ON/OFF VOLUME. Immediately to the right of them is a little toggle switch that turns the display light on and off. Just to the right of that is similar switch that locks the control panel. This is a useful feature because it is very easy to press a button by mistake but with this switch in the up position, the keypad is disconnected.

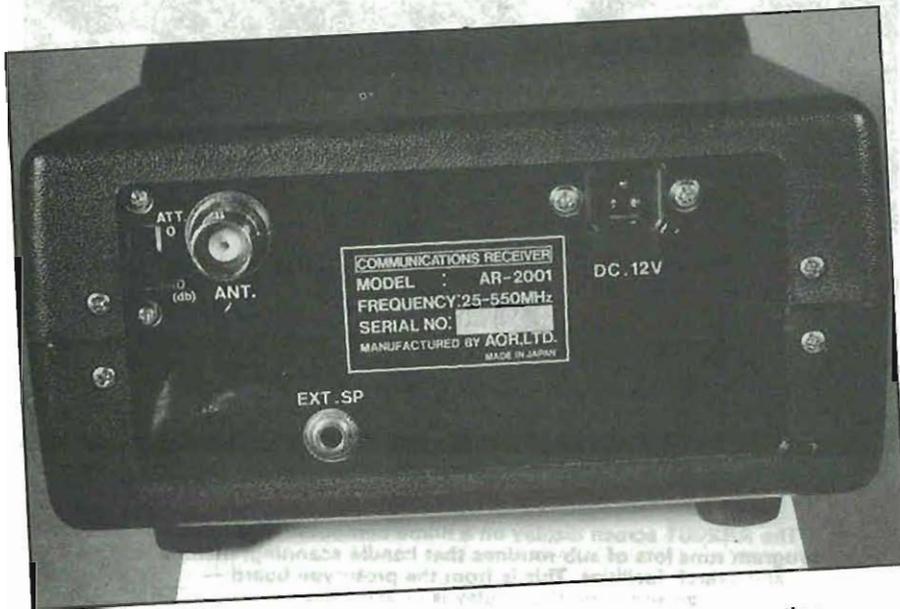
One of the problems that is usually associated with this type of keypad is the lack of 'feel'. It is often quite difficult to tell if the button really did go all the way down, but not with the AR 2001. Every time connection is made, the set emits a very loud beep, a high one for a normal entry and a low rasping one for an illegal command. This low tone lets you know that you have just hit the wrong key and to confirm it, the display will then show 'ERROR'. This is usually a signal to go back to the instruction book to find out what you did wrong.

I have been playing with one of these sets for the past few weeks and unfortunately it is as good as its advertising suggests. I say unfortunately because I will now have to buy one and I can't afford it. The only thing I can fault is the keypad. I don't like the feel of it and I would much prefer real buttons. I also hate the beep. When I get my own one, the first thing I shall do is to replace the noise making gadget with some sort of light, probably an l.e.d. It's no good just cutting out the beeper because then I would not know if the buttons had connected. It is necessary to have some sort of indicator to show that an entry has been made but I think that a little light that flashes would be far nicer than the present arrangement.

And there's more!

I would normally now conclude by saying that this is a wonderful scanner that you are likely to want a scanner to do, so rush out and try one. Instead I am going to let you in on something that is not exactly a secret but which is not general knowledge, especially as it is still at the experimental stage.

I recently mentioned a scanner from Bearcat that can be plugged into a home computer. Obviously great minds do think alike because AOR have now produced a prototype board that allows the 2001 to be controlled from a micro computer. I recently witnessed a demonstration of this board in action and I hope you will forgive the hyperbole when I say that it



There is a connector for an external antenna — essential for good reception.

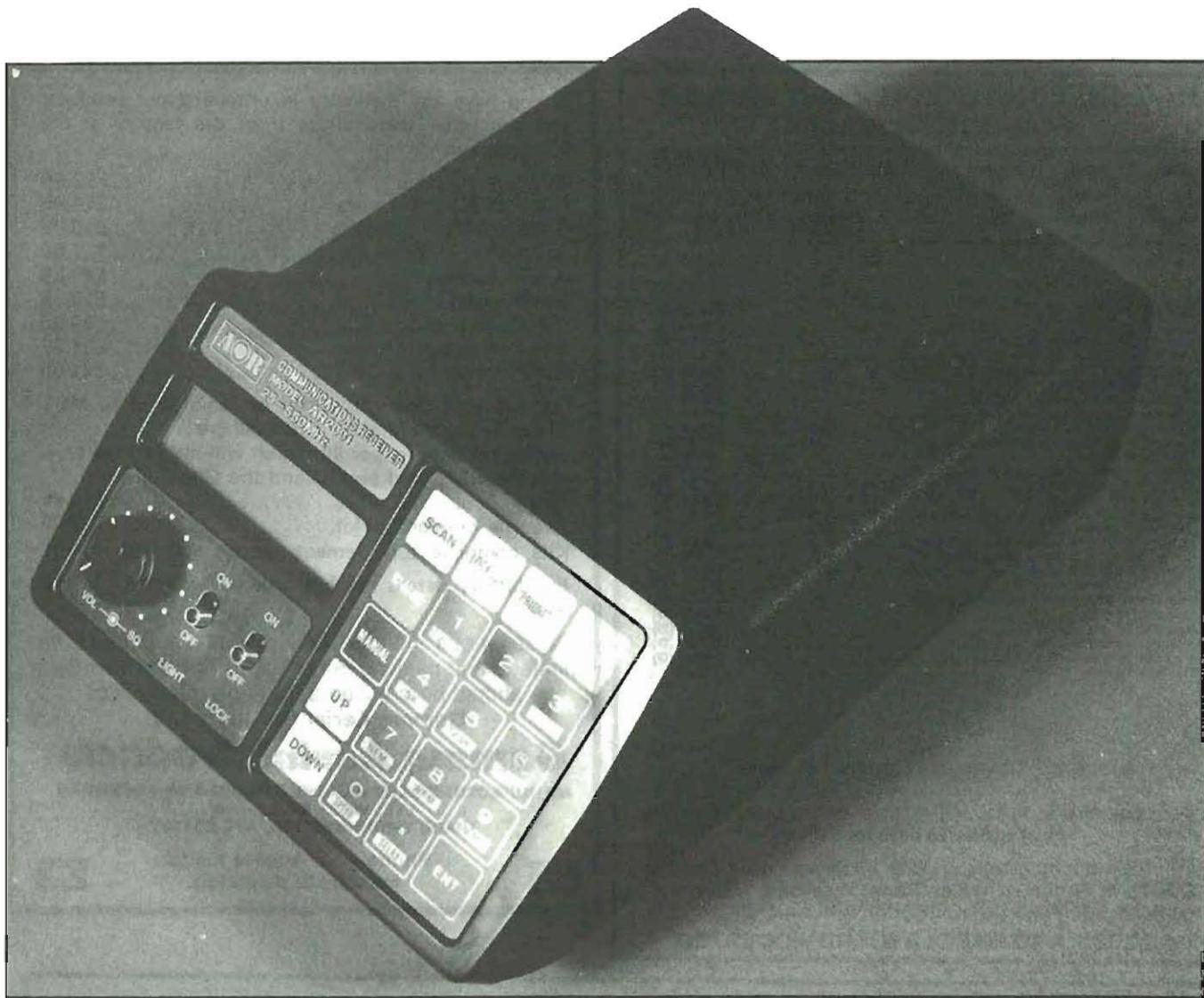
thought it was the latest in Western technology for car radios. He then able to have a good listen around while he was there.

The AR 2001 is noticeably different to other scanners because it measures just 138 x 80 x 300mm, approximately half the width of most other models. That does not mean that the components have been crammed into the case, as a quick look inside will confirm. There is one main board that is well laid out and which has plenty of room around it. There is so much room that I would have thought that AOR, the manufacturer, could have used the same board in a smaller case and included batteries to make a portable set.

The front panel is slightly confusing at first glance because most of the entry keys on the membrane keypad have two functions. This does not present any difficulties in use, if

be altered at any time during the search.

The numerical buttons are used to enter frequencies, channel numbers and upper and lower limits when searching. For instance, to listen to 145.650MHz press 1-4-5.-6-5-0 ENT. The display will then show this frequency and any signals on this channel will be heard. The display will also show the letters CH flashing on and off. This is to let you know that you have to enter a channel number between 1 and 20 if you want this frequency to be stored in one of the twenty memories. The 7, 8 and 9 keys are also used to select the mode, WFM, NFM, or AM. The 1 and 2 keys are used when setting the upper and lower limits for searching and the 3 key is used to set the time on the clock. The 4, 5 and 6 keys tell the set the units that you would like it to search in, 5kHz, 12.5kHz or 25kHz. The 0 button also adjusts the speed at which the AR



was amazing, fantastic, incredible and any other similar word you can think of. Lowe Electronics have taken the 'works' out of a 2001, connected them to the new board and put them into another case. This is plugged in their showroom. A small cable runs from this box through to an office in the back of the building and is plugged into a

Keypad Functions

Video Genie computer. I was told that this cable could easily be a mile long and the system would still work.

The programme that Lowe has written to control the 2001 is in Basic and is full of sub-routines, which makes it very easy to modify, although it seems more than adequate as it stands. All of the keypad functions are now handled by the keyboard on the computer and the screen has a prompt list to remind you which key does what. In this version of the programme, there are 800 memories. They can be scanned in small groups of say 20 or 30, or they can all be scanned. Each memory has a MEMO facility so that when the set stops on that particular channel, not only the frequency is displayed on the screen, there is also a line that tells you what you are listening to. This means that you now have to write down all the

frequencies, they can be stored in the computer and automatically displayed when a signal is present.

The computer display also has a real time clock and an S-meter to show the relative strength of incoming signals. The SEARCH facility has also been expanded. Instead of just searching between the upper and lower limits of one particular band, this programme allows the user to have three, each of which can be altered from the keyboard. Because the programme is quite versatile, this number of bands is not fixed. It could accommodate several more.

Frequency Coverage

A side-effect of using the computer to control the 2001 instead of its inbuilt micro-processor is that the frequency coverage is now extended. It now covers 15 to 550MHz, although it is not quite so sensitive down the bottom end of its range.

I could go on and on about how wonderful it is to be able to connect a scanner to a home computer, storing of frequencies on discs, printouts from the screen onto paper, access to hundreds of memory channels and so on are all things that spring to mind, but I think you have got the message. As I said before, this is just a prototype.

The interface board is not very big and it may even be possible to built it into the existing case. I will watch future developments with interest and I do not think that it will be very long before we see a production model in this country. When we do, I'll be there with the cash in my hot sweaty little hand.

The AR 2001 is supplied complete with a 12V power supply, a DC lead for direct connection to a separate supply such as a car battery and a telescopic antenna that plugs into the BNC socket on the rear of the case. It costs £345 including VAT and is available from Lowe Electronics of Chesterfield Road, Matlock, Derbyshire (Tel- 0629 2817/2430) whom I would like to thank for the loan of the review set and for the demonstration.

Please do not write in asking for frequencies. We are not allowed to publish the ones that most people ask for and I am sure that the authorities would not take kindly to me posting them to readers. Most of the dealers who sell scanners know the interesting frequencies and they may be willing to pass them on. I suggest that you ask them just as you are about to buy a scanner as they might be a little more receptive in that situation.

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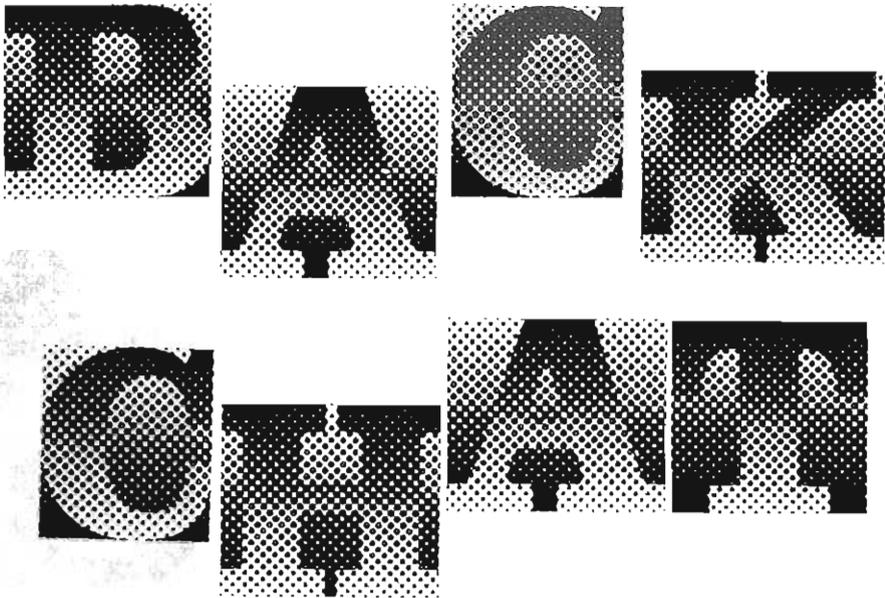


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A varied bag this month, including a letter about the magazine from a worried breaker.



I must take issue with a number of points made by Mr. Yeomans in the June issue. The idea of leaving 27MHz unlicensed is, as I see it, absolutely ridiculous. The trouble is that the law, such as it is, is not enforced.

I have used FM CB from its inception but now I only use it as a monitor for React and shortly intend to abandon it in this capacity because of idiots who abuse channel 9 and those who sideband on it.

All my old pals have gone down because FM CB has become so abused.

The new laws of March 3rd. should have made it illegal to sell, own, or use illegal equipment and every licence should be accompanied by a copy of the Code of Practice, as none are available in many Post Offices.

Although a pensioner I would like to see CB licences costing more and an obligation placed on the DTI and its agents to do the job for which we are paying, by bringing offenders to court and fining them heavily.

FM CB is important and it is a shame that the powers that be are allowing it to become a farce, basically for wallies and those who do not choose to buy a licence, or follow the Code of Practice.

Licensing fees do not come from a benevolent society and we would like to see them spent wisely, in our own best interest.

John, we suspect that laws such as you recommend are on the way. We shall keep you posted.

Hirst Word

Good old J.D. is still stirring 'em up. Tony Sheach, from Scotland's Isle of Skye has positively the last word. . .

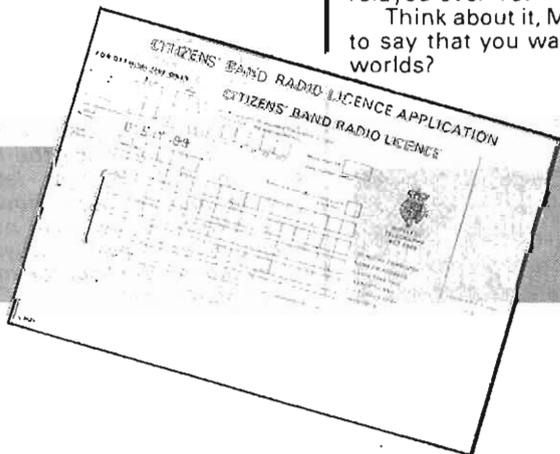
Having read the several months of argument in response to J.D. Hirst's controversial letter I must tell all the breakers using the FM CB just what can be achieved.

I live on the Isle of Skye, where we have a good breaker population. Though small in comparison to London and other conurbations we suffer no wallies, dead keyers, music stations or demented D.J.s Why? Because all our breakers respect what the system can mean.

Picture yourself in a lonely valley. Your only means of communication, save for an expensive telephone call, is your CB set. Would you key over someone talking to his nearest neighbour, ten miles away? City users don't seem to realise the service that CB can provide. No wonder that BT are going absolutely mad down south, with DF gear and nasty little yellow vans.

To return to Mr. Hirst's letter. What makes people use 19 for ratchet, irrespective of the other 39 channels? Well, Mr. Hirst, have you ever called up your trucker friends from home, to hear what's going on? Ever thanked a base station for directions received on 19 when lost in a strange town? Having been in this situation with only a portable rig for company I was grateful for the crackly directions relayed over 19.

Think about it, Mr. Hirst. Isn't it true to say that you want the best of both worlds?



934 Dilemma.

E. Scarlett wants some more information. . .

Now that 27MHz has found its own level, interest in 934 MHz seems to be growing. I find your technical articles on 934 equipment very interesting, though fortunately the choice of equipment is limited. (A distinct advantage after the overcrowded "jungle" of 27 MHz rigs)

I am now wondering if we could have a technical article on 934MHz aerials? As a full-wave antenna for 934MHz is only 13cm. long there seems little point in choosing either a quarter or half-wave antenna but I am rather concerned about remarks made by Mack the Hack (June) about beam aerials being illegal.

An article on the different types available would help many intending purchasers, as would information on the relative merits of vertical and horizontal polarisation. For instance, what advantage does a beam offer over a vertical whip?

Wish I'd thought of it first.

Sel-call Solution.

A.C. Cox of Dunstable tells us how he solved a problem. . .

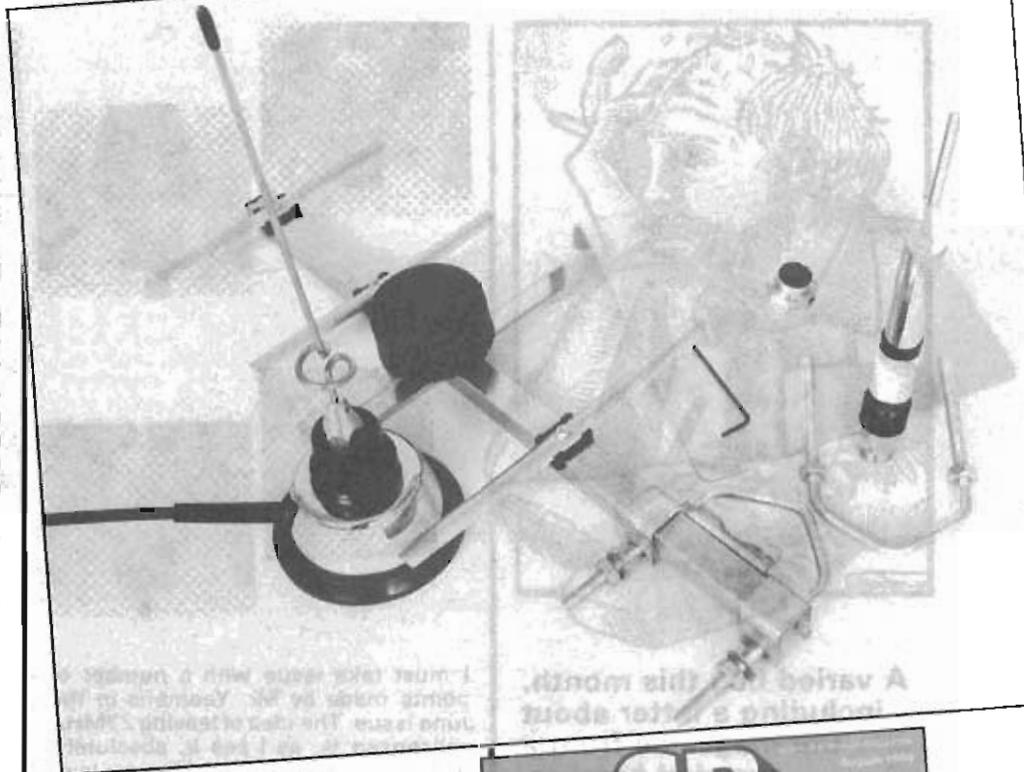
I refer to the article by Andy R. Giles, concerning the Daiwa PC100 Sel. call unit (Sept '83). As a result of this article I purchased two units from the agents, Lowe Electronics, to operate with a pair of Cybernet Beta 1000/3000 rigs. After such a good review I was disappointed to find out that they would not work with my rigs — being subject to feedback when transmitting with the units installed. Since many of the rigs sold today are based on the Cybernet chassis this problem may be more widespread than is first imagined.

I was able to solve the problem, following a fruitful visit to the agents' premises at Matlock, Derbyshire, where I met their Mr. Gill, who was, at the time, unaware of your review.

We soon discovered that the problem lay in the output side of the Cybernet chassis, or more specifically the RX/TX wiring to the hand-mike. The solution is to insert an audio isolation transformer, obtainable from RF Components (Ref: 217 725), in the speaker connection lead from the radio to the Sel. call unit and I am pleased to report that this arrangement has worked satisfactorily.

As for the general use of Sel-cell units on CB, I find their guaranteed range fairly limited in our area — some three to four miles only. Maybe there is a case for a Sel-cell calling channel but that is another story.

Letters should be sent to
Citizens' Band
Wolsey House, Wolsey Road,
Hemel Hempstead, Herts.



Above, Mr. Scarlett asks for more information on 934MHz. antennas. Watch next month's magazine for an answer.

Right Citizens' Band Magazine still going strong!

Depressed of Calne.

And a final, if somewhat downbeat letter from the Ketchup Kid in Calne, Wiltshire. . .

I am depressed at the thought that there might not be any CB magazine in the future.

I can see the dedicated breakers not bothering to buy it any more as they have switched off in despair at swearing, mucky conversations and the fooling about that causes havoc on the air. Nobody can get out and if they do they gets lots of abuse.

It seems to me that the authorities don't want to get involved and I see a future when there will be no decent, law abiding breakers in my area.

I myself have just finished writing two letters, one for the DTI and one for my local MP regarding this matter.

My family and I are dedicated CBers of over two and half years standing. We used to have the rig switched to channel 14 listening in on the side and following breakers from channel to channel. Today it is different and even my wife does not use the CB much now.

I have been thinking about all the good CBER who were on in the early days of FM; today most of them are gone. I think something should be done about it — I wish I knew how!

I think that you have the right idea, Ketchup Kid. Writing letters and making your feelings known can be very effective, we just need more people to feel the same way. But don't worry too much about the magazine — we're doing fine!



CB Citizens' Band

READER SERVICES

BACK NUMBERS

Due to the popularity of back numbers of this magazine, the Back Numbers department have informed us that the following back numbers only are available at the moment; September, October and November 1983 and February 1984. It is hoped over the next months to build up a stock of back numbers for the previous year's issues i.e. the eleven months preceding the magazine currently available and we will keep you informed of the situation. To order a magazine, fill out the form below (photocopies and handwritten orders are acceptable). The form and your cheque or postal order should be sent to Citizens' Band, Infonet Ltd., Times House, 179 The Marlowes, Hemel Hempstead, Herts HP1 1BB

NAME

ADDRESS

.....

Back issues at £1.25 each

I enclose £

Cheques and postal orders should be made payable to ASP Ltd.

Letters

We are always pleased to receive letters from readers, but at times it is impossible to answer them all. We do try to eventually get round to answering letters with an S.A.E. but this may take some time.

It is assumed that letters we receive are intended for publication unless they say otherwise. Letters for particular features like Back Chat, Q & A and Club News should have that marked on the envelope and the correspondent's full name and address, although this will not be published if requested. Readers who are hoping for publicity for events, competitions and 'other happenings' should bear in mind that the magazine goes to press at least two weeks before the magazine appears in the shops, and editorial copydates are usually a month before the 'press' date. Please remember this when sending any information in.

Writing for CB

We welcome readers contributions, especially if they cover a new aspect of CB or are D.I.Y. projects. Unless you are experienced in contributing to magazines you may not be aware of how work should be presented — if in doubt write for advice!

Telephoning

It is very difficult to deal with telephone queries, especially technical ones, as most of our energy has to go into putting the magazine together. If you can deal with it by letter, please do.

Back Numbers and Binders

See left for details of back numbers available and the ordering details. Binders for Citizens' Band magazine are also available from the same address at a price of £4.25, inclusive of postage and packing.

CB Citizens' Band

GET A GOOD COPY

CITIZENS' BAND SUBSCRIPTION ORDER FORM

Cut out and SEND TO: Citizens' Band,
INFONET LTD., TIMES HOUSE, 179 THE MARLOWES,
HEMEL HEMPSTEAD, HERTS HP1 1BB

Please commence my personal subscription to Citizen's Band with the issue

I am enclosing my (delete as necessary) Cheque/Postal Order/International Money Order for

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RATES

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£28.90 for 12 issues

Air Mail

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OR

Debit to my Access/Barclaycard *

(* delete as necessary)



Please use BLOCK CAPITALS and include post codes.

Name (Mr/Mrs/Miss)
delete accordingly

Address

.....

Signature Date

READERS HAVE been experiencing problems in getting hold of some back issues of **Citizens' Band** magazine. This has been due to recent changes in the back numbers and subscriptions department and the high demand for some issues. As you will see from the back numbers form, there is very limited availability of all back issues at the moment.

The majority of readers require back numbers for equipment reviews and so that these can be obtained, photocopies of the articles required are now available through the **Argus Specialist Publications Photocopy Service**.

To order the article(s) you require, please send a cheque or postal order for £1.50 (this amount is required for *each* article and includes the copying and postage and packing) made out to ASP Ltd. You should also give details of the article required and the date of the magazine it was published in.

We have printed a listing of the principal equipment reviews and the magazine they appeared in to help you identify the issue you want. Orders should be sent to **Photocopy Service, Citizens' Band, ASP Ltd., No. 1 Golden Square, London W1R 3AB**. Please allow **28 days** for delivery.

CB Citizens' Band

Citizens' Band Equipment Review Listing

Mobile Rigs

Amstrad 900	Jan '82
Amstrad 901	Feb '82
Appollo 16E	Jan '83
Audioline 342	Oct '82
Barracuda HB 940	Mar '82
Binatone Breakerphone	Feb '82
Binatone Route 66	Dec '81
Braemar PT40	Aug '82
Cobra 21FM	Jun '82
Commtel	Dec '83
Consam 1320	Mar '84
Cybernet 2000	May '83
Cybernet Beta 3000 Professional	Sep '83
DNT M40 FM	Jul '83
DNT M40 FM Supertuned	June '83
Fidelity 1000	Dec '81
Fidelity 2000	Mar '82
Fidelity 2001	Sep '82
Grandstand LA 83 Transverter	Apr & May '84
Harrier	Feb '82
Harvard Good Buddy	Dec '82
Johnson	Jan '82
Lowe TX40	Dec '82
Magpie 5000	Apr '83
Maxcom Super 4E	Mar '83
Maxcom 6E	Nov '82
Maxcom 30E	Feb '82
Mercury 1040	Jul '83
Midland 2001T	Aug '82
Mustang CB 2000	Jul '83
Nato 2000	Jan '83
Oscar 1	Apr '82
Oscar II	Oct '83
Radiomobile 201	Oct '82
Ranger	Oct '81
Realistic TRC 1001	Oct '81
Realistic 2003	Nov '82
Reftec 934	Oct & Nov '83
Shogun	Jun '82
Transcom GBX 4000	Mar '82
Uniace 100	Sep '82
Uniace 200	Feb '83
Wagner TC 9000	Jul '83
Westward PT2	Nov '83
York JCB 861	Dec '81
York JCB 863	Jan '82

Base Stations

Fidelity 3000FM	
Harrier CB HQ	May '82
Harvard H-407	
Uniace 300	Aug '83
Wagner	Mar '83

Handhelds and Portables

Binatone Long Ranger	Jul '82
Elftone Breaker 14	Jun '82
Elftone Convoy	Oct '82
Emergency Unit Survey	Oct '82
Harvard 020	Aug '82
Harvard 410T	Apr '82
Kaiser CBX 40	Aug '83
Westward PT2	Nov '83

Antennas

AKD DF Antenna	Oct '83
Antenna Specialists MR 440	Oct '81
Archer 21-904	Nov '81
Armstrong TAK 10	Jan '83
Audioline 449	Mar '84
Binatone Power Pole	Aug '83
Bullwhip	Oct '82
Channelstar	Nov '82
Commtel Signal Searcher	Apr '84
Comsintra 3028	Aug '82
Copperstik	Mar '83
Dial-a-Match	Oct '83
DF Antenna Survey	Jul '82
Falcon 27	Dec '82
Ferroline 27	Dec '81
Hythe Aerial Eliminator	Mar '82
JWR 7166	Feb '82
K40	May '83
Modulator MDX	Nov '83
Oscar 11CM	Jan '84
Oscar CBA GP 11	Dec '83
Philips 22EN	Aug '81
Shuttle Ace	Feb '84
Signal Searcher	Apr '84
Silver Arrow	Sep '83
Stingray	Jul '82
Super Persuader	Jun '82
Thorobred	Jul '83
Thunderpole	Sep '82
Van Ord	Jan '82
Warrior	May '84
Witchstick	Apr '82
Woi Pole	May '82

Miscellaneous

Bearcat 250 Scanner	Mar '83
Daiwa Sel Call	Sep '83
Datong Code Call	Feb '83
Maxcom Speakeasy	Aug '83
Ohra Walkphone	Oct '83
Shuttlecock Headphone Unit	Dec '82
Uniden CR2024 Comms. Receiver	Feb '84



CLUB NEWS

A mammoth club listing to catch up with the backlog we found sitting in the file when we moved!



But first, one club mention to get out of the way before the directory.

Bravo Alpha

As international co-ordinator of the Bravo Alpha International DX Group/Hampshire QSL club, I thought I should drop you a line about our club.

We are a fairly new club of about 8 months old and have to date about 50 members locally, honorary members worldwide and a division in Yugoslavia, Sweden and Hungary. We have a country co-ordinator for each division and we are awaiting news from stations we have approached to become country co-ordinators in Austria, Poland, Brazil, U.S.A., Italy, Iceland and Norway.

We are separated into two clubs, the international group and the Hampshire QSL group. This last section is for people who QSL swap and has a different certificate, rubber stamp and unit numbers. We have been offering a very good package and any profit goes back into the club. We are hoping to introduce new items like stickers, personalised rubber stamps and cards.

If anyone would like more information, please send an S.A.E. to me or the president at the P.O. Box address.

Ian,
P.O. Box 101,
Camberley,
Surrey
GU15 3LA

CLUB DIRECTORY

BEDFORDSHIRE

ROMEO LIMA MAD HATTERS DX & QSL CLUB

Chairman: Dave Bull RL01
Secretary: Alec Shearer RL40
PR Contact: Alec Shearer
Contact Address: 213 Hightown Road,
Luton,
Beds,
LU20 0BZ

CHESHIRE

C. B. FRIENDS F.M. CLUB

Chairman: C. Chetwood (Boatman)
Secretary: P.J. Lewis (Yogi Bear)
PR Contact: D. Moses (Radar)
Contact Address: Bunbury Ward,
Barony Hospital,
Barony Road,
Nantwich,
Cheshire.
Meet: Alternate Fridays, 7.30
Crewe & Nantwich Cricket & Rugby Club

LEICESTERSHIRE

GLIDERS CB CLUB
Chairman: Blue Jay

Secretary: Stoker
PR Contact: Aviary Man
Contact Address: P O Box 14,
Earl Shilton,
Meet: Mondays 7.30
Francis Arms, Stoney Stanton

MERSEYSIDE

SIERRA BRAVE CHARLIE
Chairman: George (Sandtank)
Secretary: Barbara (Blue Eyes)
PR Contact: Maurice (Movie Man)
Contact Address: 15 Lunt Avenue
off Park Lane,
Netherton,
Bootle 10,
Merseyside.
Meet: Tuesdays, 8.00
Nags Head, Thornton, Liverpool.

NOTTINGHAMSHIRE

WORK PEOPLES CB CLUB WHISKY PAPPA
Chairman: P. Foster (Foggy)
Secretary: J. Pottage (Jungle Jim)
PR Contact: P. Pottage (Jungle Jim)
Contact Address: 18 Pennine Close,
Huthwaite,
Sutton in Ashfield.
Meet: Tuesdays, 8.00
Workpeoples Inn.

SOUTHAMPTON

SOUTHAMPTON CITIZEN BAND CLUB
Chairman: J. Swift-Hook (Jungle Rock)
Secretary: P Cook (Smiler)
PR Contact: P Cock (Smiler)
Contact Address: P O Box 79
Southampton
Meet: Last Wednesday of Month.
New Bridge Inn, Woolston.

SURREY

EAST SURREY BREAKERS
Chairman: Nigel Boorman (Emma Dog 1)
Secretary: Claire Stout (Lazy Lady)
PR Contact: Ricky Nunn (Samurai)
Contact Address: P O Box 101,
Redhill, Surrey.
Meet: Mondays, 8.00
British Rail Staff Association,
Hooley Lane.
HAMPTON COURT DX & QSL GROUP
Chairman: Eccles
Secretary: Lutino
PR Contact: Tigermouth
Contact Address: P O Box 50
East Molesey, Surrey.
Meet: First & Third Tuesdays in
month, 8.00
Paddock Public House

SUSSEX

STRINGTOWN BREAKERS CLUB
Chairperson: Mrs. V. Parsons (Lazy Daisy)
Secretary: Mrs. B. Riley (Figaro)
PR Contact: Sierra Tango 301
(Bushwacker)
Contact Address: Sierra Tango 301,
P O Box 47,
Hailsham,
East Sussex.
Meet: Wednesdays, 7.30
Lion House Caravan Park.

WEST MIDLANDS

WARLEY AND BEARWOOD DX GROUP
Secretary: Paul IWB 09,
Contact Address: 6 Reynolds Court,
Kingsway,
Oldbury,
West Midlands.
Meet: Alternate Mondays,
The Two Brewers, Queens Road.
BIG T BREAKERS CLUB
Chairman: Nightmare (Keith)
Secretary: Secret Squirrel (Paul)
PR Contact: Blonde Bombshell
(Doreen)
Contact Address: 62 The Oval,
Bearwood,
Warley.
Meet: Thursdays, 8.00
Teds Social Club, Rood End Road.
WHISKEY BRAVO DX CLUB
Chairman: Whiskey Bravo 07
Secretary: Dennis Clark.
Contact Address: P O Box 15,
Warley.
Meet: Two Brewers, Queen Street.

WILTSHIRE

MIKE DELTA XRAY 32 GROUP
Secretary: I W Cleverley
Contact Address: P O Box 32
Trowbridge.
Meet: First Tuesday of Month, 7.30
CB City Shop.
TIME TRAVELLER'S DX GROUP
Chairman: John Ittor
Secretary: John Ittor
PR Contact: John Ittor
Contact Address: P O Box 10,
Westbury.
Meet: On the air anytime.

SCOTLAND

EAST AYRSHIRE FM CLUB
Chairman: Clansman
Secretary: Maggie Mae
PR Contact: Bright Spark
Contact Address: P O Box 3,
Cumnock,
Ayrshire.
Meet: 2nd Wednesday, 7.15
IFE Wing, St. Johns School.

RAMPANT LION CB CLUB
Chairman: Sewtiewl One
Secretary: Wellie Pledge
PR Contact: Moonraker
Contact Address: P O Box 2,
Alloa,
Clackmannanshire.
Meet: Alternate Thursdays 7.30
Oakwood Lounge, Sauchie.
BURNSIDE BREAKERS CLUB
Chairman: Danny Monaghan
Secretary: Ian Wallace
Contact Address: 78 Viewpark
Drive,
Burnside,
Glasgow.
Meet: Alternate Thursdays, 7.30
Quigley's Halls, Kings Park.
FORTISSAT DX GROUP
Chairman: Alex (Electronic Wizard)
Contact Address: P O Box 3,
Shotts, Lanarkshire.

WALES

RISING SUN DX CLUB
Chairman: Piranha RS II
Secretary: Early Bird RS12
PR Contact: Beamer RS 07
Contact Address: P O Box 3,
Lampeter,
Dyfed,
Meet: ch 04 Wens 10.00
TENBY AND DISTRICT
Chairman: Ron Worcester (Saw Bones)
Secretary: Lyn Burgin (Palamino)
PR Contact: Lyn Jones (Night Tripper)
Contact Address: 5 Whellers Way,
Manorbier,
Tenby,
Dyfed.
Meet: Belgrave Hotel, Esplanade,
Tenby.
CHARLIE TANGO DX CLUB
Chairman: J C Emberton (Bed-warmer)
Secretary: W Emberton (Bedcover)
Contact Address: Berth Llwyd,
Montgomery,
Powys,
Meet: Alternate Sundays, 8.00
Chequers Hotel.

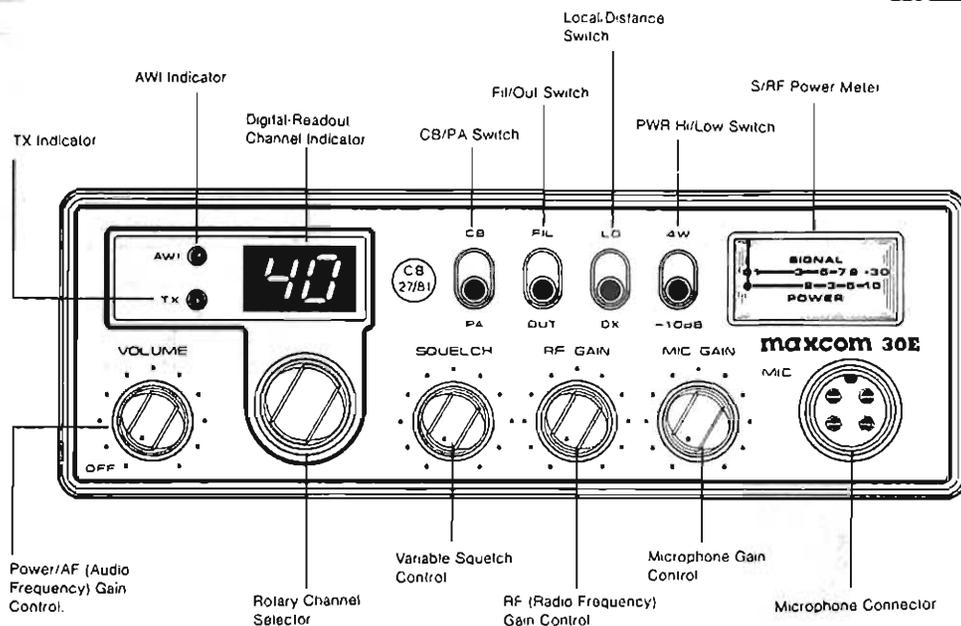
BELGIUM

OCEAN NANCY DX GROUP
Chairman: 160N001
Contact Address: P O Box 6,
6090 - Couillet
BELGIUM.

Send your club news to
Citizens' Band, Wolsey House,
Wolsey Road, Hemel
Hempstead, Herts.

Citizens' Band

REFERENCE SECTION



A CB SET AND ITS CONTROLS

VOLUME

Sometimes called *Audio Frequency Gain* control. Usually combined with the 'power on' switch. The volume control will only increase or decrease the loudness of the incoming signal — it won't alter the strength of it or affect the transmitted signal.

CHANNEL SELECTION

For choosing the channel you transmit and receive on.

CHANNEL INDICATOR

Displays, usually by LEDs, the channel you have selected. Some channel displays are of liquid crystal or fluorescent. The digits are normally bright red, green, orange or blue and visible in all but the most direct sunlight.

SQUELCH

The squelch control is used for quieting background hiss or the babble of distant signals. The control is turned slowly, usually to the right, until the background noise disappears. The squelch circuit will then only open to let through a stronger signal than those you have quieted out. As soon as the stronger signal goes, the circuit closes. Care must be taken not to turn the squelch control up too far, as then only a very strong signal will open it.

SIGNAL/RF METER

On most sets this is of the 'moving needle' type against an analogue background. Some sets do have a bar of LEDs that light up to show the strength of either the received signal or the transmission. It shows the *relative* strength, not a reading in dB or Watts. These meters cannot be 100% accurate and different rigs will give slightly different readings for signals of the same strength.

RF GAIN

This controls the reception sensitivity of the set. When decreased the set is less sensitive, and when increased the set is more sensitive to weaker signals. Reducing the gain helps prevent overloading when talking to someone who is very close.

Some sets, instead of having a suitable rotary control, have a flick two position switch marked *local* and *distance*. Full sensitivity is the distant position.

MIC. GAIN

Adjusts the sensitivity of the microphone amplifier circuit and controls the audio from the microphone that is used to modulate the signal.

CB/PA SWITCH

This switch turns your CB set into a low public address amplifier, when an external speaker is fitted into the socket on the back of the rig. Anything said into the microphone is amplified and broadcast through the speaker and not transmitted from the antenna.

tone or Filter Control

This can either be a rotary or flick switch. It controls the tonal quality of received signals in accordance with the user's preference.

POWER ANTENNA

Reduces the transmitter power from 4Watts to 0.4Watts. The attenuator should be used if your antenna is mounted more than 7 metres above the ground.

RX/TX INDICATORS

These light emitting diodes light up to show if you are receiving (RX) or transmitting (TX).

ANTENNA WARNING INDICATOR

This a warning indicator which is activated by trouble in the antenna system e.g. a bad mismatch or damage to the antenna or cable. You should stop transmitting if this lights up, and correct the problem.

Your set may also have the following controls . . .

CHANNEL 9 SWITCH

This is an 'over-ride' switch that will immediately select channel 9 without using the channel selector to find it. It is fitted to save time in an emergency.

DELTA TUNE

This is not a common feature on British sets, where frequency and stability are closely specified. It is a fine tuning device for tuning in stations that are operating slightly off frequency.

DIMMER

Works on the same principle as a domestic light dimmer, and reduces the amount of illumination on displays and dials on the CB set. A few sets have an automatic dimmer built in, which measures the lighting level through a photo-electric cell and adjusts the illumination accordingly.

ANL/NOISE BLANKER

The Automatic Noise Limiter or Noise Blanker is designed to reduce interference from a car's ignition system by desensitising the receiver slightly. If the ignition circuit is already adequately suppressed it will not make any difference.

CHANNEL BUSY/FREE INDICATOR

This is usually a LED that illuminates when a particular channel is in use or is free. This is gauged by the amount of 'traffic' on the channel which has to be at a certain level before the indicator is activated. Sets have either a 'free' or 'busy' indicator, not both.

This listing includes most of the rigs available for FM CB. Some rigs are still not on the market, but may be picked up second-hand or may be found in old stock at some shops. The prices quoted are recommended retail prices or typical price — they may vary considerably from shop to shop and area to area.

MOBILES

					ADDRESS	NAME
●	●	●	SL	Report Feb '82	Amstrad Consumer Electronics, 1-7 Garmen Rd., London N17	AMSTRAD
●	●		SL		Telecomms, 189 London Rd., North End, Portsmouth	AUDIOLINE
●				Report Feb '82		AUDIOLINE
●	●					AUDIO LINE
●			FL		K B & Co Ltd., 202 Cheetham Hill Rd., Manchester	COLT
●	●		FL		Roger D, 831 Mansfield Rd., Notts	COMMTRON
●			FL			COMMTRON
			SL		Goodmans Loudspeaker Ltd., Downley Rd., Havant, Hants PO0 2NL	CYBERNET
●	●		FL	Report May '83		CYBERNET
●	●	●	FL	Report September '83		CYBERNET
●			FL	Report July '82		DNT
			SL	Report December '81	Fidelity Radio Ltd., Victoria Rd., London NW10	FIDELITY
	●		FL	Report March '82		FIDELITY
	●			Report September '82		FIDELITY
			SL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks.	GRANDSTAND
●	●		SL			GRANDSTAND
●			SL			GRANDSTAND
●	●		SL		Telecomms, 189 London Rd., North End, Portsmouth	INTERCEPTOR
●	●		FL			INTERCEPTOR
●	●		FL			INTERCEPTOR
			FL	Great GT868 chassis	Star Warehouse, Chalk Farm Rd., London	JOHNSON
			FL		Roger D, 831 Mansfield Rd., Nottingham NG5 3GF	LAKE
			FR	Report April '83		LAKE
●	●		FL	Report March '83	Lowe Electronics, Matlock, Derbyshire	LOWE
●		●	FL	Report November '82	Maggie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
●			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
●	●		FL			MAXCOM
●	●		FL			MAXCOM
●	●		FL			MAXCOM
●			FL			MAXCOM
●			FL	Report Jan '84		MAXCOM

REFERENCE



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
MERCURY	10 40	N/A	40	13.8VDC	•				•		•	•	•	•	•
MURPHY	DS-602	£25	40	13.8VDC	•						•		•	•	•
MUSTANG	CB1000	£49.95	40	13.8VDC	•						•		•	•	•
MUSTANG	CB3000	£69.99	40	13.8VDC	•				•	•	•		•	•	•
NATO	40M	£69.95	40	13.8VDC	•			•	•	•	•		•	•	•
NATO	2000	£189.95	40	13.8VDC	•	•	•		•	•	•		•	•	•
OSCAR	OSCAR I	£85	40	13.8VDC	•						•		•	•	•
OSCAR	OSCAR II	£49	40	13.8VDC	•						•		•	•	•
REFTEC	934	£300	20	13.8VDC	•						•		•	•	•
ROTEL	RVC 220	£50	40	13.8VDC	•						•		•	•	•
ROTEL	RVC 230	£70	40	13.8VDC	•				•	•	•		•	•	•
ROTEL	RVC 240	£90	40	13.8VDC	•			•	•	•	•		•	•	•
SIRTEL	SEARCHER	£40	40	13.8VDC	•						•		•	•	•
TANDY	TRC2001	£80	40	13.8VDC	•						•		•	•	•
TANDY	TRC2002	£70	40	13.8VDC	•						•		•	•	•
TANDY	TRC2000	£100	40	13.8VDC	•			•	•	•	•		•	•	•
TANDY	TRC1004	£79	40	12VDC	•						•		•	•	•
TANDY	TRC2003	£130	40	13.8VDC	•						•		•	•	•
UNIDEN	UNIACE 100	£69.95	40	13.8VDC	•						•		•	•	•
UNIDEN	UNIACE 200	£89.95	40	13.8VDC	•			•	•	•	•		•	•	•
WAGNER	9000	£69.95	40	13.8VDC	•				•	•	•	•	•	•	•
WAGNER	COMPACT 40	£25	40	13.8VDC	•						•		•	•	•
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•						•		•	•	•
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•						•		•	•	•



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•	•		•	•	•
COMMTEL		£65	40	240/12V	•						•		•	•	•
DNT	840	£TBA	40	240VAC	•						•		•	•	•
DNT	B2740	£TBA	40	240VAC	•						•		•	•	•
DNT		£TBA	40	240VAC	•				•	•	•		•	•	•
FIDELITY	CB 3000M	£125	40	240VAC	•				•	•	•		•	•	•
GRANDSTAND	BASE	£220	40	240VAC	•				•	•	•		•	•	•
HAM INT.	JUMBO	£254	40	240VAC	•		•	•	•	•	•		•	•	•
HAM INT.	CONCORDE II	£164	40	240VAC	•	•	•	•	•	•	•		•	•	•
HARVARD	H401	£149.95	40	240VAC	•			•	•	•	•		•	•	•
MIDLAND	76-200	£150	40	240VAC	•						•		•	•	•
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•	•		•	•	•
WAGNER	BASE	£150	40	240VAC	•		•	•	•	•	•		•	•	•
WESTWARD	P.T.2	£159.95	40	240V/12V	•						•		•	•	•

MOBILES

SR JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESSES	NAME
•	•			FR	Report July '83	E.M.S. Communications, Grove St, Wantage, Oxon LX21 7AD	MERCURY
•	•			FL		Murphy Electronics, Wembly, Middx	MURPHY
•	•			FL		K.B. & Co Ltd, 202 Cheetham Hill Rd, M/cr	MUSTANG
•	•	•		FL			MUSTANG
•				FL		Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	NATO
•				SL	Report January '83		NATO
		•		FL	Cybernet 134 chassis rep. April '82	S.M.C Runbridge St, Totton, Hants SO4 40P	OSCAR
				FL	Report Oct '83		OSCAR
•				FL		RF Technology, Leyton Ave Ind Est, Mildenhall, Suffolk	REFTEC
•				FL	Cybernet chassis	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	ROTEL
•	•	•		SL	Cybernet chassis		ROTEL
•				SL	Cybernet chassis		ROTEL
•				FL			SIRTEL
•	•			SL		Tama Way, Tower Bridge St, Walsall, Staffs	TANDY
•				SL			TANDY
•				SL			TANDY
•				SL	Report Nov '82		TANDY
•				SL	Report Sept '82	Cravenminster Ltd, Unit 8, Ind Est, Llandudno Junct, Gwynedd	UNIDEN
•	•			FL	Report Feb '83		UNIDEN
•	•			FL		Knight Communications Ltd, Unit 19, Britania Est, Leagrave Rd.	WAGNER
•	•			FL		Luton, Beds	WAGNER
•	•			SL		Western Electronics, Fairfield Est, Lough, Notts	WESTERN
				FL	Report Nov '83	Westward Electronics, The Mill House, Westward Tuckenhay, Tones, Devon O86423 336/370	WESTWARD

BASES

SR JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESSES	NAME
•						Telecomms, 189 London Rd, North End, Portsmouth, Hants	AUDIOLINE
				FR	Report December '83. Also comes with telescopic antenna		COMMTel
•				FL	Rewiew May '82		DNT
•	•	•		FR	Report May '82		DNT
•	•	•		SR	Report May '82		DNT
			•	FL		Fidelity Radio Ltd, Victoria Rd, London NW10	FIDELITY
•				FL		Ben Ware Ltd, Rippon Way, Harrogate, N Yorks	GRANDSTAND
•				SL		Telecomms, 189 London Rd, North End, Portsmouth, Hants	HAM INT.
•	•	•		FL			HAM INT.
•				FL			HARVARD
•	•			FL			MIDLAND
•				FL	Reviewed August '83	Cravenminster Ltd, Unit 8, Industrial Est, Llandudno Junction, Gwynedd	UNIDEN
•				FL		Knight Communications Ltd, Unit 19 Britania Est, Leagrave Rd, Luton LU3 1RJ	WAGNER
				FL	Report Nov '83	Westward Electronics, The Mill House, Tuckenhay Tones, Devon, Tones, Devon O80423 336/370	WESTWARD



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TDNE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER
DNT	HF 12/3	£47.55	3	BATTERIES	•										
KAISER	CBX40	£80	40	BATTERY	•					•		•			•
MAXCOM	7E	£49.95	40	BATTERY	•								•		
MIDLAND	75-720	£59.95	40	12VDC	•										
TANDY	TRC1001	£119		BATTERY	•					•		•			•
WESTWARD	PT2	£159.95	40	Int. Batt.	•					•		•	•		•

PHONE CHECKLIST

NAME	MODEL	PRICE	FREQUENCY	RANGE	RECHARG. BATT.	IN USE LAMP	INTERCOM	AUTO DIAL	EXTERNAL ANT.	SECURITY CODE	HANDS FREE
A-PHONE	TP125	£80	49MHz., 1.6-1.8MHz	230m	•	•		•			•
FIDELITY	WANDERER	£170	47MHz., 1.7MHz	200m	•	•	•	•	•	•	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	•	•	•	•			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		•	•	•	•	•	•	
MAXCALL		£116	49MHz., 1.7MHz	100m	•	•	•	•			•
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	•	•		•			
MAXCOM		£99	49MHz., 1.7MHz	200m	•	•	•	•			
PACER	7800	£149	49MHz., 1.7MHz	500m	•	•	•	•			
SUPERFONE	CT600	£115	49MHz., 1.7MHz	100m	•	•	•	•			
SUPERFONE	CT650	£199	49MHz., 1.7MHz	230m	•	•	•	•		•	•
SUPERFONE	CT505	£299	49MHz., 70MHz	1Km	•	•	•	•	•	•	

PORTABLES

TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESS	NAME
					Solid State Electronics (UK), 41 Twyford Ave, Shirley, Southampton (Tel. 0703 7803 780335)	DNT
					A.T.M., AM House, 9A Old's Approach, Tolpits Ln, Watford Herts	KAISER
					Plustronix Ltd., Hempstalls Ln, Newcastle-under-Lyme, Staffs	MAXCOM
					Tame Way, Tower Bridge St, Walsall	MIDLAND
			FL	Report Nov '83	The Mill House, Tuckenhay, Totnes, Devon 080423 336/370	TANDY
						WESTWARD

The range of telephones and communications accessories available to the consumer is increasing rapidly. Not all equipment is approved by British Telecom — so look for the tag with the green dot if you want 'BT Approved' accessories.

CORDLESS PHONE

STANDBY	BATT. IND.	PRIVACY BUTTON	COMMENTS	ADDRESS	NAME
			Report Feb '84		A-PHONE
			Report July '83 BT Approved	Fidelity Ltd., Victoria Rd., London NW10	FIDELITY
			Report May '83		FREEDOMPHONE
			Report Aug '83	Thanet Electronics Ltd., Recuber Rd., Baltinge, Kent	HANDY PHONE
			Report June '83		MAXCALL
			Report Oct '83	Maxon Group, AM House, 9A Old's Approach, Tolpits Ln., Watford, Herts	MAXCOM
			Report May '83		MAXCOM
			Report May '83		PACER
			Report April '83	Superfone Communications, London NW2	SUPERFONE
			Report April '83		SUPERFONE
			Report April '83		SUPERFONE

ANTENNA CHECKLIST

The Citizens' Band Antennas

Name

Lists antennas by name and model number and gives you, where possible, the name and address of the manufacturer or distributor.

Construction

The majority of home base antennas are made of aluminium and mobile antennas from stainless steel, but fibre glass can be

The D.T.I. specs for CB antennas are now more liberal than those originally in force, with the base loading restriction removed to permit any type of loading as long as the antenna is 1.65m in length (or less) and no more than 55mm in diameter. This revised checklist now includes the many new antennas released after this change of heart.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
AERIAL SUPPLIES	Aerial Supplies (Redditch) Ltd., 6 Widney House, Bromsgrove Road, Redditch, Worcs. (0527 62620/60107)	Silver Star	AL	1.5	100	B	B	Pole	C M D
		Silver Arrow	AL	1.5	500	B	B	Pole	
		Javelin	AL	1.64	500	B	B	Pole	
		Javelin Dipole	AL	1.64	500	B	C	Pole	
ARMSTRONG	Stateside Trading Ltd., Audley Avenue, Newport, Shropshire	SAM 10	SS	1.08	1000	M	B	Surface	G G G G G G G G
		SAM 20	SS	1.06	1000	M	B	Spring Surface	
		TAK 10	SS	1.06	1000	M	B	Boot lip	
		TAK 20	SS	1.08	1000	M	B	Spring Boot lip	
		MAG 10	SS	1.08	1000	M	B	Mag.	
		MAG 20	SS	1.06	1000	M	B	Spring Mag.	
		BDY 20	SS	1.06	1000	M	B	Side	
		PEC 20	SS	1.06	1000	M	B	Side, Fold over & Quick Disconnect	
ARCHER	Tandy Corp. Tameway Tower, Bridge Street, Walsall, West Mids.	21-904	SS	0.5	50	M	B	3/8" thread	D
AVANTI	CB Radio Centre Ltd., 337 Kenton Road, Harrow, Middlesex	AV 241	SS	1.22		M	B	Stud	D E F G
		AV 241T	SS	1.22		M	B	Trunk	
		AV 241M	SS	1.22		M	B	Mag.	
		AV 241MM	SS	1.22		M	B	Mag.	
BANDIT	Telecomms, 189 London Road, North End, Portsmouth	B10	SS	1.42		M	B	Mag.	G H I J K L M N O P
		B15	SS	0.81		M	B	Mag.	
		B15	SS	1.22		M	B	Mag.	
		B20	SS	1.42		M	B	Mirror	
		B30	SS	1.42		M	B	Drill Thru	
		B30	SS	1.22		M	B	Drill Thru	
		B40	SS	1.42		M	B	Various	
		B40	SS	1.22		M	B	Various	
		B50	SS	1.42		M	B	Various	
		B50	SS	1.22		M	B	Various	
BREMI UK LTD.	Unit 6, Innage Park, Holly Lane Industrial Estate, Atherstone, Works.	B27S	SS	1.62	1000	M	B	3/8" thread	C C E
		C27S	SS	1.38	1000	M	C	3/8" thread	
		HB27S	AL	1.55	1000	B	T	Pole	
CB SERVICES	97 Crab Lane, Harrogate, North Yorks.	Bullwhip Knuckleduster	SS AL	1.5 1.5		M B	B B	Various	C D
COMMTEL	Near Third Drove, Fengate, Peterborough	Rocket	SS	1.5		M	B	3/8" thread	E F
		Shuttle	FG	1.5		M	B	3/8" thread	
		Starlight	SS	1.5		M	B	3/8" thread	
		Shuttle Star		1.5		B	B	CW	
		Signal searcher	AL	1.5		B	B	Clamp	
		Messenger	SS	1.5		B	B	Pole	
		Signal keeper	SS	1.5		B	B	Clamp Triped	
FREEMAN AND PARDEE	Tything Road, Arden Forest Ind. Est, Alcester Works.	Invader	AL	1.5	250	B	B	Pole	E F F
		Thunderpole II	AL	1.5	500	B	B	Pole	
		Thunderpole III	A1	1.65	500	B	C	Pole	
GAMMA AERIAL PRODUCTS	Lye, West Midlands. (0384 891132/891474)	Skybreaker	AL	1.5		B	B	Pole	D D D E E E
		Avenger	AL	1.5		B	B	Bracket	
		Lofty	AL	1.5		B	B	Bracket	
		Skybreaker II	AL	1.65		B	C	Pole	
		Avenger II	AL	1.65		B	C	Bracket	
		Lofty II	AL	1.66		B	C	Bracket	
Firefly	SS	1.65		M	C	3/8" thread			

na Checklist will give you the following information:

used in some models. The list tells you what material the antenna is manufactured from.

Length

The legal maximum length of an antenna is 1.65m, base or mobile.

Maximum Power

This is intended as a guide

only, as the law only permits an effective radiated power of two watts. The power rating will give some indication of sturdiness. Figure refers to watts.

Type

Indicates whether a mobile or base antenna.

Loading

Indicates the type of

electrical loading of the antenna; top, centre, bottom or continuously wound.

Mount

This gives some idea of the mount or type of mount appropriate for the antenna concerned. Home base antennas are usually pole

mounted, but can be house gutter mounted. Mobile antennas are either mag. mounted by a strong magnet, attached to the car gutter or boot lid edge whilst others are physically attached in the same way as a car radio antenna. Mobile antennas with 3/8" thread usually will fit a range of mounts.

KEY		
Construction	Loading	B — £6-£9.99
SS — Stainless Steel	T — Top	C — £10-£14.99
AL — Aluminium	C — Centre	D — £15-£19.99
FG — Fibreglass	B — Base	E — £20-£24.99
Type	CW — Continuously wound	F — £25-£29.99
B — Base	Price Bands	G — £30-£39.99
M — Mobile	A — £1-£4.99	H — £40 plus.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE		
HAM	Diels Wholesale Unit 8, Block 2, Whitegate Indust. Est., Bathgate, West Lothian	Balcostar DV27	AL	1.2	200	B	C	Bracket	D		
		DV27TW	FG	1.39	100	M	T			BB	
			FG	1.19	100	M	T			BB	
HOT ROD	Stateside Trading Ltd, Audley Avenue, Newport.	FM UK	SS	1.27		M	B	3/8" Thread	B		
LES WALLEN MANF.	Pembroke Works, Remsgate Road, Sandwich.	Modulator LC	SS	1.65	1000	M	B	3/8" Thread	C		
		M.D.X. Long	SS	2.00	1000	M	B			CC	
		M.D.X. Short	SS	1.65	1000	M	B			CC	
		Mini M.D.X.	SS	1.10	100	M	B			CC	
		Mini 27	SS	1.40	800	M	B			CC	
		Thunderbolt	SS	0.83	200	M	B			CC	
		Saturn	AL	1.00	500	B	CW			Pole/wall	F
Exper	AL	1.00	1000	B	CW	Pole/wall	FO				
R.W. BADLAND LTD.	Roetan Trading Estate, Providence Street, Lye, Stourbridge, West Midlands (Lye 3180/5051)	Rebel 1	SS	1.5	500	M	B	3/8" Thread	B		
		Rebel II	SS	1.5	500	M	B			BB	
		Rebel Raider	SS	1.6	500	M	B			CC	
		Rebel Bullet	SS	0.61	50	M	B			CC	
		Red Devil	SS	1.62	500	M	CW			3/8" Thread	CC
REVCO	Telecomms 189 London Road, North End, Portsmouth.	Revco	SS	1.0	100	M	B	Various	B		
SMC	Rumbridge Street, Totton Street, Herts	Oscar CBA 11GP	SS	1.5		B	B	Mag. Foldover Base	F		
		Oscar 11V11S11	SS	1.5		B	B			DD	
		Oscar 11CM	SS	1.2		M	B			DD	
		Oscar 11CE	SS	1.2		M	B			DD	
		Oscar 11NE	SS	1.5		M	B			DD	
		Dscer 11SE	SS	1.6		M	B			DD	
		Oscar 11ZE	SS	1.6		M	B			DD	
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesex.	T40	SS	1.4	500	M	B	Various	E		
VALOR	W.T.A. Electronics Ltd 111 Cromer Road, Hellesdon, Norwich (0603 47694)	Warrlor 650	SS	1.62	1500	M	C	3/8" Thread	C		
		Half Breed 520	SS	1.52	1500	M	B			CC	
		Half Breed 510	SS	1.2	1500	M	B			CC	
		Half Breed 500	SS	0.9	1500	M	B			CC	
		Dial-a-Match 640	SS	1.2	100	M	B			CC	
		Dial-A-Match 530	SS	0.6	25	M	B			CC	
		Rubber Duck 300	SS	0.36	25	M	B			CC	
		Pro Am PLB 27	SS	1.52	200	M	CW			3/8" Thread	E
		Road Hog 338	FG	0.9	1000	M	T			3/8" Thread	F
		Road Hog 336	FG	1.2	1000	M	T			3/8" Thread	DD
		Road Hog 335	FG	1.2	1000	M	T			3/8" Thread	DD
		Road Hog 337	FG	1.75	1000	M	T			3/8" Thread	DD
		Road Hog 831	FG	0.6	500	M	T			3/8" Thread	DD
		Road Hog 838	FG	0.9	1000	M	T			3/8" Thread	DD
		Road Hog 835	FG	1.2	1000	M	T			3/8" Thread	DD
		Road Hog 836	FG	1.52	1000	M	T			3/8" Thread	DD
		Road Hog 836	FG	0.78	500	M	T			3/8" Thread	DD
		Black Magic 333 1/2	FG	1.2	500	M	T			3/8" Thread	DD
		Black Magic 333	FG	1.2	500	M	T			3/8" Thread	DD
		Black Magic 332	FG	1.62	500	M	T			3/8" Thread	DD
		Black Magic 333 1/2	FG	0.78	500	M	T			3/8" Thread	DD
		Black Magic 833	FG	1.2	500	M	T			3/8" Thread	DD
		WTA	W.T.A. Electronics Ltd. 111 Cromer Road, Hellesdon, Norwich. (0603 47694)	Wot Pole 1	AL	1.5	1000			B	B
Wot Pole II	AL			1.5	1000	B	B	CC			
Wot Stick I	SS			1.6	1000	M	B	3/8" Thread	A		
Wot Stick II	SS			1.5	1000	M	B	3/8" Thread	B		
VAN DRDT	Knight Communications, Unit 18 Brittenia Estate, Leagrave Road.	Audio King	SS	1.5	2000	M	B	3/8" Thread	G		

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REFTEC 934 MHZ. Contact South of England agents — 934 Communications. See "Mack-Chat" August issue of Citizens Band. Tel: 01-859 0933.

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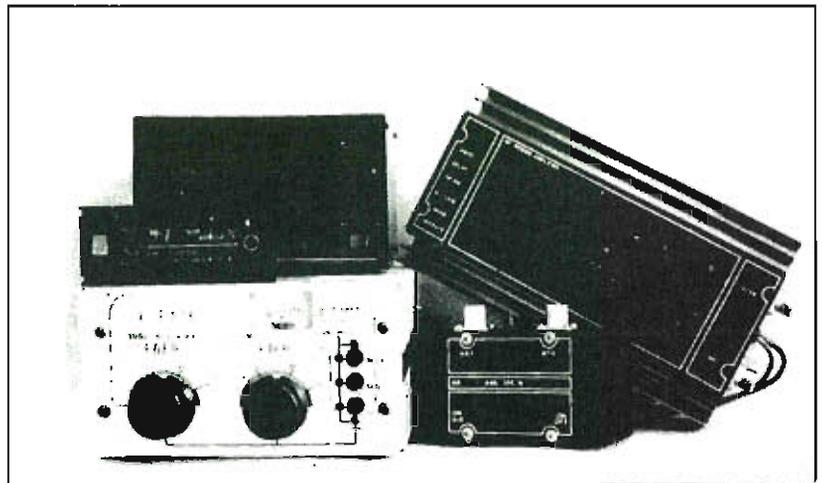
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